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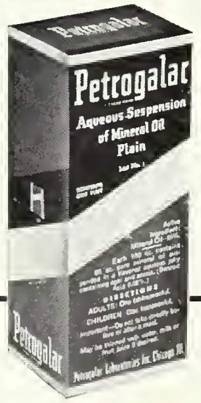

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Volume XXXV JANUARY, 1942 No. 1

FORMATION AND USE OF PLASMA*

MILTON SEMOFF, M.D., T. C. Thompson Hospital, Chattanooga

The T. C. Thompson Children's Hospital led with the first plasma bank in Hamilton County, thus making available for our children this essential emergency biologic fluid. Plasma is only the citrated fluid portion of the blood, but when we realize that herein is contained the vital salts, proteins, and antibodies, its importance increases. Experimentation has shown that the red blood cells are not essential in the ordinary medical or surgical emergencies. Here then we have available a substitute for whole blood that eliminates the time-consuming trials that go with the typing, collecting, and giving of whole blood transfusions.

The principal indications for fresh, whole blood are the blood dyscrasias and infections, also the severe anemias when the red blood cells are obviously needed. Undiluted plasma is necessary only in the very low protein states. Diluted preserved plasma is satisfactory for most other conditions and better for many. For example, in shock it is immediately available; any required amount may be given; it can be given more rapidly; and it supplies the needed fluid and electrolytes as well as blood proteins.

Blood plasma has many other advantages over whole blood. It is always ready for administration, easily transported, or stored for long periods of time. The dangers of incompatible reactions are removed. The mode of administration may be intravenous, intramuscular, or subcutaneous.

This availability of plasma has led to much experimentation. Consequently, plasma has now established itself not only as an emergency measure, but as an important therapeutic agent. Just a few outstanding conditions in which it has found use will be mentioned. In surgery: shock, dehydration, burns, wound disruption, hepatic diseases, intestinal obstruction, and bleeding ulcers. In medicine: hemorrhagic states of the gastrointestinal tract, nephritis, nephrosis, infections, edemas, anuria, increased intracranial pressure, and the hypoproteinemias.

More specifically to us, the pediatricians, plasma has become almost a necessity. So little is necessary to upset the immature physiology of the child that secondary metabolic dysfunctions are often more dangerous than the primary disease. With seventy per cent of the body weight represented as water, the importance of fluid balance is obvious. You have all, no doubt, seen this summer some of the acute infant diarrheas. The child arrives in shock, severely dehydrated, with marked protein and salt deficiency. The administration of plasma to these children has been truly remarkable. For with one quick procedure it is possible to restore protein, salts, water, and readjust the vital fluid balance.

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*Read before the Chattanooga Clinical Congress, October 16, 1941.

The preparation of blood plasma varies from the simple decanting of citrated plasma to the highly complicated drying of lyophile processes. Decanting of citrated plasma is adaptable only to the use of fresh typed plasma for immediate use. Since the technique is an open one, the plasma cannot be stored. Lyophile or dried plasma can be prepared only with a great deal of equipment and trained personnel. It is not feasible for the small hospital. If bought commercially, it is very expensive and necessitates having sterile diluents available. An interesting sidelight in this day of civilian warfare was the suggestion that every adult have his blood drawn and prepared in sealed ampoules as lyophile plasma. Thus in the event of an emergency the individual would have always with him plasma ready for use.

Between these two extremes is a simple method practical for the plasma band of a small hospital or clinic. This is the Baxter vacuum technique which we use at Children's Hospital. A series of flasks, which contain the proper diluents and a partial vacuum, a machined valve, some needles, and a donor are all that are needed to prepare and store plasma. The entire system is a closed one, safeguarded by rubber vacuum seals.

The first flask is a partial vacuum containing seventy cubic centimeters of two and one-half per cent sodium citrate. A special valve is inserted through the rubber diaphragm. The donor needle connected to the same is inserted in the vein. The valve is opened and 500 cubic centimeters of blood flow in at any desired speed. The valve is withdrawn, and the rubber seals itself. Thus we have citrated blood, vacuum sealed, and ready to be set in a refrigerator. After the cells have settled out (five to seven days), a second flask containing only a vacuum is obtained. In a like manner, the same valve is inserted through the rubber diaphragm. However, this time a six-inch blunt needle is attached. The vacuum in the first flask is slowly released; the needle is inserted into the supernating fluid; the valve is opened; and the plasma is drawn off. The yield of 200 to 250 cubic centimeters sealed in a vacuum is thus ready for storage or use. Each flask will draw in a total of 500 cubic centimeters so that a diluent such as saline or dextrose may be added. We also add merthiolate as extra precaution. Similar flasks have been stored by others for over two years without contamination. A further technique for diluted plasma makes use of a 1,000 cubic centimeter flask which contains 500 cubic centimeters of an anticoagulant diluent.

The plasma bank may now be established. The initial donors will have to be volunteers, but thereafter blood is drawn to replace each flask opened. The number of flasks on reserve will depend on the needs of the institution. We collect and store most of our plasma diluted. As mentioned earlier, diluted stored plasma will answer almost all needs. However, for emergency such as increased intracranial pressure, we keep some undiluted plasma.

We type all donors. First, as a matter of record and, secondly, because laymen are inclined to feel cheated if they are not told their type after donating their blood.

The administration of plasma is like physiologic saline by all parenteral routes. The subcutaneous absorption is only slightly slower than physiologic saline. For intravenous usage a special stainless steel filter removes all of the fibrin precipitation.

Thus we have combined in one simple closed method the preparation, storage, and administration of blood plasma. The cost discounting labor is about one-tenth of commercial human plasma. The small hospital or clinic with no added personnel can easily prepare its plasma needs.

ALCOHOLISM: SOME "CAUSES" AND TREATMENT*

MERRILL MOORE, M.D., Boston, Massachusetts

To ask me to talk about the causes and treatment of alcoholism is like asking a man to talk about the weather; neither is well understood; but we are trying to understand them both, the alcoholic and the weather, and we have hopes.

First, I should remind you that today physicians no longer think of alcoholism as a moral problem, but rather we consider it now as a disease or a symptom of a disease; it could be either or both. And if we consider it as a disease, we must immediately say that we know as little about alcoholism today as we did about diabetes forty years ago. We believe that alcoholism is a disease (or the symptom of a disease) we do not yet understand. And we believe that the alcoholic is a sick man whether he is emotionally sick previous to his drinking, or intoxicated with alcohol, or socially maladjusted as the result of drinking to excess. We are slowly and painstakingly beginning to collect clinical facts and psychological data to prove the point that alcoholism is a disease and that the alcoholic is sick. Even though we are not yet exactly sure about the nature of the disease, or how best to treat it, we are certain it must be studied more, and that symptomatic or empirical treatment should be attempted.

Once a man is drunk, he is treated like any other intoxicated patient. To relieve the symptoms of simple drunkenness these principles, basic to all medical therapy, are employed:

1. Take the liquor away from the patient or take the patient away from the liquor.
2. Get the alcohol out of his stomach and body systems by methods that promote elimination.
3. Give the patient fluids and food, as he can take them, to help restore normal water balance, vitamins, and minerals in his body.
4. Use sedative or analgesic drugs such as bromides or aspirin to relieve the nervous tension or "jitterness" from which the alcoholic always suffers. (Several other drugs, such as barbiturates, phenacetin, acetanilid, amidopyrine, benzedrine, nicotinic acid, and cevitamic acid combinations are all useful and of proven value in the drug treatment of alcoholism.)
5. Protect the patient and take care of him so that he cannot hurt others or himself.
6. Carry out certain special procedures in various emergencies.

These are the six cardinal points on which the modern scientific medical treatment of alcoholism is based. The extent to which this treatment is carried and the points that require most emphasis depend on the needs of the individual case and the judgment of the physician and the facilities that are available. Each of the procedures mentioned above can be varied; no single procedure is adequate, but a judicious combination of them usually does a good deal to help the patient recover from a drinking bout with minimum damage.

This, of course, is not the whole story. There are still other conditions that require special handling. A few of these are:

1. The treatment of the hang-over.
2. Psychotherapy and the management of the alcoholic.
3. Care of the chronic inebriate or the chronic alcoholic addict.
4. The treatment of patients with alcoholic psychoses, delirium tremens, Korsakoff's syndrome, etc.

I would like to speak later more in detail about these conditions. For the moment let us consider the alcoholic further as a sick person.

As medical science offers more evidence every day to support this view, we find ourselves slightly encouraged in the difficult problem of treating alcoholism, particularly because this new attitude opens new approaches to the problem which gained so little in the past from being handled in the hush-hush manner or by uplift.

We now see that the alcoholic is a man with real difficulties (internal or external), who is trying to solve them by drinking. That solution always fails. In the past this attempt at escape has not been recognized and sometimes it has been entirely ignored. Now it is beginning to be more fully appreciated. The alcoholic has for a long time been the forgotten man of medicine. Physicians realize that it is now time for medicine and psychology to give the drunk a break and see what can be done to help him as a sick person and as a human being.

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*Read before the Southern Psychiatric Association, Nashville, October 6, 7, 1941.

This new attitude that the alcoholic is sick provides three general approaches: the physical, the psychological, and the social. The relationship between the body and the mind is very important in alcoholism, though, as with most problems in psychology, the mind-body problem is not settled yet for alcoholism. It is obviously true, however, that anything that helps to build up the alcoholic physically is usually in the long run good for him.

In the development of the attitude that alcoholism is an illness, at present we can say no more than that the alcoholic is emotionally or psychologically sick, but many new pathways of treatment have been mapped out and are now being explored on this assumption. So far only occasional and tentative or relative success has been achieved in treatment, generally speaking. Many drunks do not cooperate in attempts to study them and do not respond, or are very resistant to efforts to treat them. Many keep on drinking and emerge triumphantly with their alcoholism after long and serious efforts have been made to cure them. The tenacity and endurance with which some alcoholics cling to their alcoholism is phenomenal; they often have more energy to spend than the physicians who are attempting to treat them, and a single alcoholic, when in good form, can lead all his friends a merry chase, and as long as his money lasts can manage to exhaust a wide circle of acquaintances, family, and physicians.

Even in the face of these difficulties, we are beginning to know a few things about the alcoholic. We are beginning to know:

1. What he was like *before* he drank too much; his early personality.
2. What he is like while drinking; what alcohol does to him and how it changes him.
3. And what he is like after he keeps on drinking a lot or stops after long and heavy drinking (as they sometimes do).

And this, by the way, is an extremely interesting tripod of facts; in certain cases it is like dealing with three different men.

We know, for example, that before the alcoholic begins drinking, when he is young, he has certain characteristics or personality traits. We have found this out by inquiring into the history of alcoholic patients before they became alcoholic by asking the parents and teachers what the patient was like at home or in school. This always produces interesting material and often it is very revealing. Parents, teachers, and former employers usually say, speaking of the alcoholic: "He was different. He was more sensitive. He was rather interesting, but he used to get into a lot of trouble. When he had difficulties, he could nearly always get out of them. He was usually lovable and he showed promise. We liked him very much." Or words to that effect. When pressed, they would usually admit that he also behaved often in an immature way or appeared to be unstable or even infantile at times; he was more childish than he should be for his age. They would say that he was often more attached to his mother than the average boy and that he reacted poorly to disappointment or deprivation. Sometimes he had tantrums, or outbursts of temper, or was overemotional, or he struggled in vain to hide his emotions, or he could never express them appropriately. He would never admit that he was wrong and showed a tendency to blame others. He "couldn't take it" as easily as his schoolmates and was sometimes overidealistic. He often found it necessary to believe he was better than he really was.

This description of the prealcoholic personality could go on rather extensively, but it is definite that most of it is *not* the description you get of the person who did *not* become alcoholic, who got along without liquor, or with it. And the report is similar for the woman who develops alcoholism. There are certain differences, of course. It is the masculine type of woman who tends to develop the most severe type of alcoholism, the woman who is frustrated in her attempted adjustment to mating and childbearing, and who is not happy or successful in loving and being loved.

When the alcoholic *is drinking,* we know that these things, among others, occur chemically or physiologically as the result of the ingestion of alcohol:

1. The alcohol is quickly absorbed from the stomach and intestine into the blood stream.

2. Some of it is held or stored in the liver.

3. Some goes directly to the brain and enters the spinal fluid.

4. The level of blood alcohol depends mainly on the amount of alcohol ingested and the weight of the body.

5. Excretion begins rapidly through the lungs and kidneys and oxidation of alcohol takes place in the tissues, resulting in a lowering of the blood alcohol level.

6. The efficiency of neuromuscular functioning is reduced as the blood alcohol level rises from stages of relaxation to stupor (and in some instances to death, if enough alcohol is ingested rapidly).

7. Emotional changes occur as shown by alterations in personality and behavior, which may be summarized by saying that the nervous functions are depressed; for alcohol, strictly speaking, is a narcotic drug that depresses the "higher" centers (inhibition and conscience) and releases the "lower" centers (emotions and impulses). Alcohol releases the brakes. When we "get tight," we really get loose. Alcohol does not stimulate anything in the body except the tongue and mucous membrane of the throat. Sexually, for example, it may increase desire, but after a slight pseudo-excitement it decreases potency. Alcohol is a poor adjunct to sex and alcohol is a poor substitute for sex, though some individuals actually use it as a crude substitute for the sexual release of nervous energy, or as an anesthetic to calm frustrated sex drives or other drives.

And as an aftermath of drinking (too much) we also know that deficiency diseases occur frequently because the heavy drinker usually spends his appetite and his money on liquor and seldom eats adequately. It would take a large catalog merely to list the unpleasant aftereffects of drinking too much, the physical, nervous, and social sequelae of inebriety.

We need not mention here, except in passing, the numerous other complications of alcoholism—pneumonia, damage to the liver and kidneys, head injuries, fractures, and various legal complications. But they are there; do not forget them.

All these problems for the alcoholic certainly far outweigh the obvious pleasures gained by drinking; so we must conclude (it is really a truism) that people do not drink to excess because they choose to do so. And at the same time we must admit that we do not yet know exactly why they drink to excess.

In the psychological field, many theories have been advanced. I would like to list a few of these because they stand out, as well as any, when we look for "causes." Of course, when we speak of the causes of alcoholism, we must try to define alcoholism and at the same time realize it is not (as yet) a specific disease, but rather it is a general condition (a syndrome, not an entity) and a way of reacting or a behavior pattern. In that sense it gets right down to human fundamentals; either one does drink or one does not; if one does drink, one can hold it or one cannot (the alcoholic cannot); and if one is an alcoholic, one can be described as (a) a man who cannot get along with liquor and cannot get along without it, (b) a man who lets liquor control him rather than control liquor, (c) a man in whom alcohol acts as a poison, (d) one who drinks to a point where drinking interferes with his job and home life, and (e) one who cannot stop drinking.

These are crude descriptions, but they are practical. A jury would recognize their common meaning. So far there is no accurate scientific analytical definition of what an alcoholic is, but everyone knows a drunk when he sees one, even though there are all degrees of drunkenness and all types of drunks.

When we attempt to define drunkenness, all must also remember that we should make allowance for several unknown factors in the picture; issues we do not yet understand, but issues that may someday be better understood. I should like to mention two of these.

First is *heredity*. Is alcoholism inherited? The answer is that alcoholism runs in some families, but that could as well be the result of common environmental factors as of genetics. There is no unassailable positive evidence (yet) that alcoholism is hereditary (strictly speaking), or that it directly injures the stock of a family, or that it influences longevity favorably or unfavorably to any marked degree. It can cause a lot of trouble in a family, but in the long run there is some evidence to indicate that alcoholism improves a family stock by killing off or sterilizing the weak members.

The claim, "I have to drink because all the men in my family did," no longer passes muster, except as a poor excuse, an insufficient alibi, a third-rate rationalization.

So it is with much of the early mythology of alcoholism.

The next point is *constitution* or *"tolerance."* How is it that one man can take one cocktail and start looping when another can drink six highballs in a row and not bat an eye? The answer is: we do not know. But tentatively these observations may be offered: (1) Some persons appear to have a nervous system that is relatively resistant to alcohol and others do not. This appears to be a constitutional matter and is poorly understood. There is no known scientific basis for that statement, but as an empirical fact it is indisputable. Everyone knows someone who "gets drunk if you hit him on the head with a rotten apple," and everyone knows someone else who has "hollow legs," or can drink all his friends under the table or take them all home and pour them into bed. (2) Usually the large man can drink more than the small man (because alcohol is dissolved about equally in most body tissues). (3) Alcohol gets into the blood stream quicker if taken on an empty stomach. Food in the stomach slows up the absorption of alcohol. (4) The liver has something to do with the amount of alcohol that goes into the blood stream and something to do with the rate at which it is absorbed, but that is not the complete picture. (5) Some people react more strongly to alcohol when they are tired or under strain or undergoing emotional stress. (6) Different personality types react to alcohol in different ways as everyone knows. Some men get talkative when they drink, some get weepy, others get pugnacious, or aggressive, or morose, or manic, or erotic. (7) Then there is the matter of individual tolerance and the question: can it be acquired or lost? Tolerance is not well understood, but it appears to be basically a physiological phenomenon. There is some evidence that a little can be gained and much can be lost. Tolerance may be related to liver function and to sugar metabolism, by the way. (8) Last there is the fact that certain alcoholic beverages are tolerated better by certain persons than other alcoholic beverages. Some men can drink Scotch and cannot drink bourbon; wine makes some men sick, but whisky does not. Beer does not agree with some people who can drink wine and some people cannot drink sherry, but can drink port, and so on.

All these points are really extremely interesting and need to be better understood scientifically. We are far from understanding individual idiosyncrasies in relation to alcohol.

At this point we should mention the phrase "allergy to alcohol" and bring up the question: what is allergy to alcohol? That depends on what allergy is. Are some people "allergic" to alcohol? Possibly. Judgment on that point should be deferred, for allergy, too, will bear further investigation.

In our efforts to understand alcoholism we need not feel too discouraged, for all these problems of the alcoholic are really expressions of basic problems in human physiology, biochemistry, and psychology toward the solution of which thousands of physicians and research technicians are working. Someday one of them may be rewarded with fruitful discoveries. Now apart from all these "organic" (or chemical and physiological) factors or "causes" of alcoholism, let us consider some of the "functional" (or psychological and social) factors which alone or in combination may be considered as possibilities of causation. These we also hope to understand better someday. What are they?

1. "Allergy" to alcohol.
2. Adolescent insufficiency, inadequacy, or inferiority feelings.
3. Sexual difficulties.
4. Marital disunity.
5. Personality problems.
6. Habitual neurotic obsessions.
7. Loss of self-confidence and pride.

8. Nonevaluating factors.

9. Loss of social and economic status (job, etc.).

10. The philosophy of fatalism and an attitude of defeat.

I consider each of these to be extremely important. Possibly these conditions are not basically responsible, but certainly they seem to operate as precipitating factors, though we must admit that many people face these same problems without recourse to alcoholism. As general or precipitating factors in the production of alcoholism, each of these can be favorably influenced by general hygiene, by psychotherapy, and by the application of some of the principles of preventive medicine, and by legislative and social measures. That is another reason why these factors are important.

I have been practicing psychiatry now for a number of years and I have seen and treated many alcoholic patients over varying periods of time. In preparation for this paper, and in order to offer you some original observations rather than glib generalities, I have selected the records of 100 alcoholic patients who have had fifty hours or more of study and treatment. In some instances these cases have been under observation a month or six weeks and in some instances longer, but I feel in each case that I know the patient well enough to say that this or that was an outstanding difficulty or trouble that "caused" him to drink. I do not think the factors I am listing are necessarily the primary cause, the whole cause, or the final cause, but I do, in each case, feel that one factor listed was the main cause or the precipitating cause of the outburst of the patient's alcoholism. The patient may have had poor heredity or low tolerance, but he did not begin to drink to excess or have much trouble with liquor until *after* the listed "cause" became an obvious or a definite problem and made his life more difficult. In each case efforts to answer the question, *"Why do you drink?"* not once but regularly, led back to the same inner problem or external situation that was an expression of these "causes" I am mentioning, and I should like to offer a few words of comment on each one. But first possibly I should also say that these factors are not merely "causes." They may also represent stages in development of an individual as much as causes of alcoholism. Yet "cause" is implied in each "stage."

Whether of fast or slow development, depending largely on the intellectual character of the individual, the evidence of the danger of "alcoholism" is really inherent from the outset in the physiological and neurological condition of the individual and may be especially observed in the patient's reaction to alcohol, if one looks hard enough and long enough. From the very beginning of experience in drinking, the use of alcohol affords self-revealing evidence of neurotic tendencies to a large number of people. A broad, primary division may be made between those who use alcoholic beverage for release of self-expression and those to whom its use is merely physically relaxing and socially pleasant. At the same time one can say that there are only two kinds of alcoholics: those that drink too much once in a while and those that drink too much all the time.

Therefore, explanation of these stages of "alcoholism" must necessarily acknowledge their interdependence throughout periods of development from the incipient state of pathological inability to assimilate alcohol to the general or special neurologic or psychiatric disorders resulting from its use.

I would comment on these "causes" as follows:

1. *Allergy.*—Even though we have mentioned *allergy,* we should mention it again. Assuming that allergy to alcohol, or something like it, exists, certainly lack of recognition of the "allergic" condition, added to the impulse to drink as others do in social experience, leads to alcoholism.

2. *Adolescent Insufficiency.*—Many young people begin to drink in high school or college, or at dances or social functions because they feel basically inadequate or deficient in self-expression due largely to repressive experience in their lives and to frustrations during their adolescent years, or simply due to lack of training and proper guidance.

3. *Sexual Difficulties.*—Sexual abstinence in early adult years due to inadequate prep-

aration for and information about sex experience or to uncongenial domestic conditions unquestionably favors the development of alcoholism. Most alcoholics have severe sex problems to begin with or they develop them rapidly as the alcoholism develops.

4. *Marital Disunity.*—The use of alcohol and the alcoholic environment (bars, clubs, roadhouses, etc.) to "escape" from incompatible or unhappy marital situations is a very common fact.

5. *Personality Disorders.*—When neglected, these factors can accumulate to the point of becoming acutely disturbing, with resultant drinking for release of unspent nervous energy—"to blow off steam." This type of drinking can easily be recognized as destructive and dangerous and usually leads to further efforts toward repressive handling of difficult situations. Such efforts are usually ineffectual and frequently result in a "vicious circle" that breaks down into physical or mental illness via alcohol.

6. *Habitual Obsessions.*—The accumulative action of habitual destructive factors on a patient's personality usually leads to nervous tension that alcohol releases. Anxiety grows as public disapproval becomes more marked, and as adverse, cynical judgments are expressed, the alcoholic drinks to avoid them. This pattern is sometimes mistaken for the simple compulsion to drink. To the family it may appear that the patient is simply drinking, when actually a more complex social reaction is taking place. Some alcoholics are really hysterics, some are borderline cases, and some are psychotic. In all of them the drinking can be a symptom of psychopathology.

7. *Loss of Self-Confidence.*—Loss of self-confidence through increasing self-catechizing and self-humiliation, through continued self-destructive tendencies, or the misdirection of personal energy toward no goal, or an unattainable goal, or in useless or hopeless conflict is commonly an answer to the question, why does an alcoholic drink?

8. *Nonevaluating Factors.* — Increasing inability to evaluate self, home, and economic factors incidental to these conditions often accompanies the deterioration or disintegration of the alcoholic personality. The relationship of this vicious circle to excessive drinking is obvious.

9. *Social and Economic Troubles.*—Gradual abandonment to degradation of social and economic status commonly leads the alcoholic to drink to excess.

10. *Fatalism.*—The final stage of loss of self-will to overcome recognized disabilities, or obstacles, that might actually be overcome, with help from others, is described as fatalism. The development of this general reaction often precedes by several years the development of alcoholism. The two must be somehow related, possibly causally.

I have listed above the ten commonest conditions I have observed, but they are not all. In 100 cases I have found one or more of those conditions always to be present. Yet much more could be said. If these ten points may be considered as the main factors, there are still many additional factors, or "causes," or situations the alcoholic may be involved in. At times he uses these situations to his own disadvantage and as a means of beginning to drink.

Of course, the alcoholic likes to evade responsibility (everyone does to some extent, for that matter), but the alcoholic does it more clearly and more persistently than his nonalcoholic brothers. The alcoholic, besides being very likable and plausible, is often very clever in getting what he wants and crafty in getting his own way. He can nearly always step out of a situation if he is given half a chance. You can never pin him down to anything. He is like quicksilver spilled on the floor. Try to pick it up. Working with an alcoholic is like digging a hole in the sand by the edge of the ocean. You dig a little, then a wave comes along and fills it in again; you dig some more and turn your back for a second, and when you look again the sides have caved in and there is no more hole. Living with an alcoholic mate must be just about the same experience. A special breed of iron women should be bred to mate with alcoholics, though some would say it would be an awful waste.

I have studied some of my own patients very carefully, and although I must say that there is no particular alcoholic "type" so far as I can see, here are some more of the frequently encountered psychological patterns I can see in the cases I have worked with. It is usually not very helpful to deal in generalities, so I offer these paraphrasings somewhat apologetically, yet in the hope that they may give someone a glimpse into why men drink, or rather why some men drink as much as they do, and so desperately. Personally, I feel that the conditions I have further outlined in the following paragraphs are of deep psychological significance.

The roots of alcoholism are in childhood or adolescence. There are usually some of these factors present and perceptible in childhood or adolescence:

1. Overdominance by father or mother, or pampering by one or both parents, or overdominance by one parent and overindulgence by the other. Sometimes overdominance and overindulgence can be part of the same picture.

2. A tendency to develop feminine ways and means, especially by boys who are in too close association with or are dominated by the mother. (I am speaking of male alcoholics.)

3. Trouble with bed-wetting and masturbation, not to the usual extent to which these conditions exist, but beyond that to the stage of being a problem.

4. Craving for sweets or stolen food.

5. Employment of devious little tricks to get their own way.

6. Failure of the home and school education adequately to develop will power and failure to train the child to hold his own and feel equal in and to its own world, especially in athletic sports such as ball games, running, climbing, swimming, boxing, tennis, and social games. For example, it is particularly important for a boy to know how to run and play and climb and to know how to throw a ball at the age of five or six or seven. If the child does not get the hang of it by himself or with his playmates, the parents should see to it that children are always up to their herd or one step ahead of it, and give them instruction so they will be. This should be trained instruction from outside if the child does not react well to family instruction. Competition is often *not* an advantage. Children should be coached, not pushed.

7. *Suicidal drives.* These are the real basic disturbances in many alcoholics.

8. *Wish to attract attention* and annoy or disgrace the family and be fussed over and put to bed by an anxious or cross mother. Technically, we are beginning to consider this behavior pattern as the child's way of creating a form of substitute masochistic step-up or a means the child learns to pull down anger or punishment on his head in order to relieve neurotic feelings of guilt or inferiority. It is also a way of attracting attention. Most children go through a stage where they consider any form of attention (even unpleasant attention) desirable, and the alcoholic seems not to outgrow this.

9. The development of an escapist attitude to life all along the line of their growing up.

Some of these things may sound silly or trivial to you or to any normal person, but to the alcoholic they are serious matters. These things, the memory of them and the results of them, are the things that the alcoholic sweats, weeps, and gets drunk over.

Even that is not all. One continues to find factors or "causes" if one continues to hunt for them. Here are some more conditions that may or may not have much to do with the patient's drinking, but they are certainly present in the pattern of his life. One sees many conditions in the life pattern of the alcoholic that appear to result in the building up of an immature personality conditioned to the pattern of defeat. This may be the result of insecurity in childhood, or it may come from the basic fear of losing the love and affection of a parent which renders the individual who drinks unwillingly or unable to take a chance on being a failure, unwilling even to try to be successful. The alcoholic is often so inhibited and crippled by his fears that from the beginning he is unable to strive to succeed in an adult pattern because he is afraid he will fail and so lose the love and respect of those on whom he depends. Instead of trying, he "short-circuits" himself, so to speak, and never makes the effort; he just drinks and fails and never undertakes the planned, coordinated struggle and sacrifice which are necessary to achieve a position of respect and success in the community. Thus he wastes his energy or misdirects it tragically.

Another prominent feature is the wish of the alcoholic to follow the line of least resistance and obtain immediate pleasure. He cannot postpone a pleasure easily. For example, he is prone to fantasy giving up alcohol, but his inability to bridge the gap between wish and the fulfillment usually remains.

In conclusion, if I were to implant only a single thought for future growth in your minds, it should be the idea that the origin of alcoholism lies far behind the adult and begins long before adolescence in most cases. The things that build up what psychologists call a feminine identification in a man tend to lead to the alcoholic pattern. These things are parental dictatorship, or pampering by the parents, and failure, in a boy, to establish a good relationship with his father or other men.

In thinking of the alcoholic, we must remember that the prealcoholic personality may express itself by neurotic manifestations such as bed-wetting and other symptoms. The alcoholic develops a personality which is not especially frank or open, rather resorting to ruses and tricks. The alcoholic is a past master of kidding—even kidding himself. The alcoholic uses his baby tricks to obtain desired aims rather than working for them. If this continues, it usually leads to pathological lying. The prealcoholic personality likes lots of attention. He may be a voyeur or an exhibitionist in a mild sort of way. He tends to demonstrate stronger reactions of masochism and sadism than the average. The "escape from the realities he is unwilling or unable to face"—that is what his drinking starts as being or comes to be.

Physicians attempting to treat alcoholic patients on the basis of one or more of these assumptions have met with some success, but failures are more common, I regret to say, and that goes for all types of medical treatment and all types of psychiatric treatment in and out of institutions (and for all groups of laymen who have attempted to face these problems with the alcoholic).

There are two main aspects in the treatment of alcoholism by the psychological approach. One consists of the doctor's use of his own insight to improve the patient's condition. The other is the doctor's attempt to help the patient develop insight that he may learn and understand for himself more about the hitherto unconscious motives and drives which had led him to use alcohol to excess in the hope that with his own intelligence and outside help he can control these drives better and spend his energy more constructively.

Sometimes a patient who has not always been an alcoholic is helped by the removal of some obvious (to the physician) external difficulty from his life—a nagging relative in the house, or a relievable business worry. In some cases patients can be taught to see how futile are their attempts to escape by way of alcohol so that they may thus be less prone to use alcohol when confronted by future problems.

In the field of treatment by organic methods some experiments have been and are now being performed with control groups as well as with alcoholic patients. Findings in this work are being tabulated, and someday they may show important concrete results. For the present, however, the single great correlating factor eludes us all, assuming, of course, there must be such a factor. At present we do not know for certain whether there is one cause or many causes for alcoholism, a single chemical deficiency, for example, or the many social and psychological precipitating factors I have mentioned above. Meanwhile we continue to approach the problem with an open mind and from all directions.

Drugs are being used today, along with psychological treatment and management, with some benefits to the patient and some improvement in certain cases, though in some instances even the sponsors of the methods are conservative or cautious in their claims and have found the results inconclusive. We should continue to use these drugs, however, and try out new drugs. The sedative and analgesic drugs are especially useful in the treatment of the hangover. Benzedrine sulphate (or amphetamine) is especially useful as an adjunct to psychotherapy in treating chronic alcoholics who tend to drink only when they become depressed or nervous.

In the last analysis, psychotherapy, in or outside of an institution (combined with the use of drugs), offers the best prognosis to the alcoholic who wants help, who wishes to get well, and who is receptive, not resistant, to treatment.

The results of psychotherapy alone have not been encouraging where it has been applied to severe chronic alcoholics, or chronic alcoholic addicts. The first step in the treatment of chronic alcoholism should be hospitalization to determine the patient's physical condition, or institutionalization, preferably in the country or on a farm where he can be kept away from liquor and can be supervised and can be helped to be useful and, if possible, happy. Some chronic alcoholics do not like this at first, but many who have been difficult to manage at home or unable to work on account of their drinking become fairly well adjusted in institutions or on a farm and learn to enjoy a simple life and admit that it is better for them and that they feel better than they did when they were drinking heavily in the city and bouncing from bar to bar, or drinking in hotels, or upsetting their families, or getting involved in automobile accidents while under the influence of alcohol.

Many alcoholics appreciate the fact that they are sick and are grateful for the recognition of this fact on the part of physicians. Look back on the history of any alcoholic after he has died; it is obvious then in retrospect that he was a sick man; that his alcoholism followed a course parallel to an illness, even though it was not easily or clearly recognizable at the time when he began to drink or when he was drinking.

Of course, there are some alcoholics who do not want to get well, who do not wish to live, who actively wish to die, but do nothing about it but drink. They are a group that needs special study.

I wish it were possible for me to go further into the matter of psychological treatment of alcoholism, but we have not time or space at this moment. There is so much that should be said on this subject that I should like to have an opportunity to deal with it separately at another time. The psychotherapy of an alcoholic is like any psychotherapy, only it is more difficult. The doctor has to be more patient and more lenient. All psychotherapy is slow and takes a lot of time at each interview and requires many interviews, but the psychotherapy of the alcoholic is even slower and usually takes a long period of treatment. Some people feel that it is not worth while. I do not agree with this viewpoint. In brief, however, psychotherapy for the alcoholic consists of the following steps roughly outlined:

1. Getting the patient's story; finding out (if possible) why he drinks the way he does; why he started to drink *when* he did, and doing whatever can be done about it.

2. Gaining the patient's confidence and encouraging him to want to get well. This is always difficult because the alcoholic is usually so discouraged that he does not trust anyone, not even himself, and in some instances it means actually stimulating his will to live—making him want to go on at all.

3. Continuing to suggest to the patient that he can get well; that it is worth while; that he can be useful or happy in some way in the world; that he has good qualities which can be utilized or developed; helping him to get over his feelings of inferiority and inadequacy, which are often the core of his neurosis.

4. Helping the patient to re-educate himself emotionally; to learn to relax without liquor; to face his basic problems and try other solutions to them than the alcoholic escape. Helping him to use his intellect to guide his feelings, or helping him to spend his energy in constructive rather than destructive ways. The alcoholic often has social assets that serve him in good stead when he needs them. These should be cultivated. This may lead to social rehabilitation on an adequate and nonalcoholic level. All games, sports, interests, and hobbies are valuable to the alcoholic if you can get him to accept them.

The simplest way of looking at the whole problem of treatment of the alcoholic is to assume that he is *a man with problems* *who uses liquor as his solution to them* (or escape from them). Treatment thus logically becomes the process of (a) finding out what his problems are and doing what can be done about them, *other than drinking*, trying other solutions which sometimes work and are better than drinking; and (b) trying to train the alcoholic *not to drink*, but to learn other ways of relaxing without alcohol (in sports, hobbies, work, and all forms of play and recreation). Some alcoholics actually can learn to say, "Make mine ginger ale" or "I'll take Coca-Cola," when it comes to the test of social drinking. Some actually can learn to give up alcohol and not drink and be satisfied even when their friends drink around them.

If you have an alcoholic who will not or cannot cooperate in a treatment program, who insists on drinking, what can you do for him?

1. Try to see that he eats as full, normal, and adequate a diet as possible to buffer the alcohol he drinks with food, vitamins, and minerals.

2. Keep him busy and amused because many alcoholics drink only when bored or unoccupied. The wives or friends of some alcoholics could do more than they do to keep the patient interested and busy, though often it is a thankless and difficult task. Try everything that is wholesome and go with him and participate with him. See that the alcoholic knows how to do and actually does what is suggested. Sometimes once he is started, he will keep on by himself.

3. Try to help him learn to be less passive, defeated, and destructive in his thinking. Do not nag him or blame him. It does no good and often does harm. Remember he is a sick man, emotionally sick, or with an immature personality, and may be doing the best he can.

I grant that these ideas are difficult to follow, but at present no more concrete suggestions can be offered. They are worth trying, and as things now stand, thousands of people are still working further at the problem and someday they may succeed.

THE PRACTICAL TREATMENT OF THE CARDIAC ARRHYTHMIAS*

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Tonight we are interested in the disturbance of the regularity of the heartbeat. Some arrhythmias are so minor and unimportant as to be of no significance. However, the sudden onset of a severe arrhythmia with its palpitation, weakness, pallor, sweating, and the rapid offset of those symptoms may be among the most dramatic episodes in medicine.

In a discussion of the treatment of the cardiac arrhythmias a word must be said about their diagnosis. It is a common misconception that an electrocardiogram is necessary to determine the type of an irregular or a rapid heart action. Usually, by careful bedside study, one can make the correct diagnosis. In the discussion that is to follow several clinical characteristics which distinguish each arrhythmia will be mentioned.

Frequently, the electrocardiogram must be resorted to in order to settle the diagnosis, and on the whole this is the most reliable method, especially in the hands of an experienced man, but it is not infrequent that a more accurate diagnosis can be made *clinically* than from an electrocardiogram.

Now if we turn to the disturbance in rhythm, we find two general types: those which are unimportant and those which are more serious.

Among the first group are:

1. *Sinus arrhythmia.* We can dispense with this by saying that it is generally considered to be one of the signs of a normal heart.

2. *Premature contractions.* These may arise from various foci in the auricles, from the A-V node, from the bundle tissue, or from any place in the ventricles.

Ventricular extrasystoles are very common and occur in practically every normal person at some time during life. Such factors as nervousness, fatigue, loss of sleep, too much tobacco, and various illnesses, especially febrile ones associated with toxemia, predispose to this arrhythmia in people with normal hearts. They also may occur in various forms of organic or structural heart disease. The presence of ventricular extrasystoles is one of the useful early signs of too much digitalis and is always watched for during therapy with that drug.

Premature contractions arising from foci other than the ventricular myocardium are less commonly encountered.

Premature contractions are occasionally troublesome in nervous, tense individuals. Usually they are not sufficiently troublesome to warrant treatment except when they become frequent. Large numbers of premature contractions may be confused with auricular fibrillation which they may simulate closely, but a differentiation by the bedside can be made easily in most patients by mild exercise, after which extrasystoles disappear and auricular fibrillation becomes more irregular.

Premature contractions from any focus are best treated by removing any of the possible predisposing causes. If they still remain and treatment is necessary, they can be eliminated by quinidine. A dose of one-tenth gram (one and one-half grains) should be given first to test sensitivity to the drug, which is not uncommon. If the subject is not sensitive, a therapeutic dose of two-tenths gram (three grains) three times daily should be given. This dose will usually control the premature contractions as long as it is continued.

The remaining arrhythmias, which form the second group, are on the whole more serious. They are more rapid, and may have a more profound effect on the patient. The first one of these, *auricular fibrillation,* is a very common one. It occurs most commonly in people with rheumatic valvular heart disease, especially with mitral stenosis, and is frequently encountered in arteriosclerotic heart disease and coronary artery disease. In addition, it occurs in many people with entirely normal hearts, usually as short isolated bouts of the arrhythmia. As examples of the latter, when I was an intern, I had a friend who would have a bout of auricular fibrillation almost every time he played tennis. It would frequently come on at the end of the second set. I have another friend, a physician, who has auricular fibrillation frequently precipitated by drinking a glass of ice-cold water.

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The heart action in auricular fibrillation is completely irregular. In untreated cases it is usually rapid, the apex rate ranging from 130 to 180 with a large pulse deficit. The two arrhythmias, with which it may be confused, are very frequent premature contractions and auricular flutter with changing degrees of auriculoventricular block. The symptoms associated with this arrhythmia are usually not severe, commonly mild weakness with a sensation of irregular "fluttering" or "pounding" in the chest.

There are two methods of treatment of auricular fibrillation. First, if it is the paroxysmal type, which may occur in otherwise normal hearts, the method of choice is quinidine therapy. This is given in gradually increasing doses beginning with two-tenths gram or three grains (following a test dose for sensitivity). The dose is increased every two or three hours by two-tenths gram each dose. By this method the rhythm usually reverts to normal after several doses. Occasionally large doses are required and I have given as much as one gram at a single dose after smaller amounts had failed. In patients who have auricular fibrillation and congestive heart failure, digitalis is the drug of choice. In this method of treatment the fibrillating heart is simply slowed down and no effort is made to restore the rhythm to normal. Digitalization is done in this case as always in heart failure; that is, an untreated, average-sized person requires about fourteen to sixteen cat units of retained digitalis bodies for complete digitalization. This is equivalent to 1.4 to 1.6 grams of the powdered leaf. The point of adequate digitalization is quite simple with a fibrillating heart because the drug causes a marked slowing of the ventricular rate and a decrease in the pulse deficit. Ordinarily we keep a fibrillating heart under the influence of digitalis at a rate of about sixty to seventy. By following the ventricular rate carefully adequate digitalization can be maintained. Practically the only time this slowing effect does not occur is with hyperthyroidism, and when a fibrillating heart will not slow with digitalis therapy one should suspect this disease. Auricular fibrillation is one of the most satisfactory arrhythmias to treat because of its response to quinidine and digitalis.

3. *Auricular tachycardia* is one of the most common severe forms of disordered heart action. It probably is seen more commonly in people who have normal hearts than any other type of severe tachycardia. This is the classic form of paroxysmal arrhythmia in which the onset and offset of the attack is sudden and with which we associate weakness, pallor, sweating, a feeling of oppression in the chest with a sense of palpitation, and on examination find a rate of 150 to 200 a minute, regular rhythm, low arterial blood pressure, and high venous pressure. Some patients are so disabled during these attacks that they are able to do nothing but lie down, others are able to carry on a moderate amount of normal activity while having an attack of the arrhythmia. Occasionally these paroxysms lead to disaster, especially in people with advanced heart disease, by precipitating severe heart failure or acute pulmonary edema.

A very important characteristic of this arrhythmia is the constancy of its rate. If the rate is counted, let us say at 170, then counted again ten minutes later, it will be found again 170 (or not more than one or two beats off caused by an error in counting). This can be repeated at intervals of a few minutes throughout the attack and the count will still be 170. Occasionally the rate may be rapid, as fast as 250. As we listen to the heart the rhythm seems to be perfectly regular.

The treatment of this arrhythmia is usually satisfactory and frequently dramatic. Two methods of treatment are used: (1) increasing the tone of the vagus nerve and (2) quinidine. Very commonly pressure on the carotid sinus immediately stops the attack. Pressure over the eyeballs may similarly be effective. When these fail, a drug such as syrup of ipecac or apomorphine may be given, and during the act of vomiting the attack may suddenly cease. The response to each of these stimuli is mediated through the vagus nerve. A recently introduced drug which is of great value is one which simulates the action of the parasympathetic nervous system; that is, vagus nerve. It is a derivative of acetylcholine called mecholyl. This drug has the fortunate combination of acting like acetylcholine, but being destroyed much more slowly. Its action, therefore, is effective over a period of several minutes and simulates very closely increased activity of the vagus nerve and parasympathetic system. It is not without danger, however, and should never be given to people with bronchial asthma or with coronary artery disease. The drug is given in amounts of about fifteen to twenty milligrams subcutaneously in adult patients of normal size. Usually the tachycardia ceases within five to ten minutes after injection. If it fails to do so within fifteen minutes, a second injection may be given. Whenever this drug is used a syringe containing one one-hundredth of a grain of atropine should be kept ready for instant use. Atropine is the natural antagonist of mecholyl and will quickly abolish any untoward symptoms induced by that drug. Almost immediate action may be obtained by atropine given intravenously (1/150 to 1/200 grain). Reactions to mecholyl do not commonly occur, but when they do occur they may be serious.

The second method of treatment of paroxysmal auricular tachycardia is the use of quinidine. This drug increases the refractive period of the heart muscle and thereby abolishes the attack. It should be given in doses much like those described for auricular fibrillation—i. e., six-tenths gram (ten grains) may be given (following a test dose), and this dose may be repeated every two hours until a total of about three grams (forty-five grains) is given. This is usually effective. It is well to bear in mind that quinidine, being an isomer of quinine, is closely related to it chemically and produces the same type of toxic symptoms.

In rare cases patients with paroxysmal auricular tachycardia will not respond to either of these measures. In some of these cases digitalis is effective, although the first two methods are those of choice.

4. *Auricular flutter* is somewhat less common than the preceding ones. In this arrhythmia, the auricular rate is very rapid (several hundred per minute), but the ventricular rate is usually around 150 to 180. A valuable clinical sign is the rapid auricular pulsation transmitted to the jugular vein. Flutter usually occurs with rapid onset and offset, and is apt to occur in the presence of organic heart disease, but not necessarily so. When the ventricular rhythm is regular, this arrhythmia is very difficult to distinguish from paroxysmal auricular tachycardia. When the ventricular rhythm is irregular, which commonly occurs when changing degrees of auriculoventricular block is present, it is very difficult to distinguish it from auricular fibrillation.

There are two forms of treatment of auricular flutter. The method of choice is quinidine therapy and the dose given is the same as that used in the treatment of paroxysmal auricular tachycardia. About a third of the cases will respond to quinidine by reversion to normal rhythm. The second method of treatment is with digitalis, the drug being given as in congestive heart failure. After complete digitalization about a third of the cases will revert to normal rhythm, and in many of the remaining group the rhythm will change to auricular fibrillation. On the whole, auricular fibrillation is a much easier arrhythmia to treat, and therefore is much more satisfactory to have than flutter. It can in turn be treated either by quinidine which reverts the rhythm to normal or by digitalis which will control it by slowing it down. Digitalis and quinidine should not be given simultaneously in large doses. Therefore, it is better to give quinidine first because it is excreted more rapidly. If it is ineffective after a sufficient period, it can be discontinued. One can then allow twenty-four hours for the excretion of quinidine (which is rapid), and digitalis can be given. On the other hand, if digitalis is given first, is found ineffective and is discontinued, its excretion is a great deal slower than that of quinidine, and the latter drug cannot be given for several days. Carotid sinus pressure produces no reversion to normal rhythm in auricular flutter. Its only effect is to slow the ventricle without having any effect on the auricle. This is frequently of value as a diagnostic aid, however. By stimulating the carotid sinus when taking an electrocardiogram the ventricular complexes can be eliminated briefly to uncover the auricular complexes, which can then be seen more clearly.

5. The last arrhythmia to be discussed is *ventricular tachycardia* which is one of the most severe. It is an uncommon arrhythmia and is usually associated with grave heart disease. The ventricular rate may be 150 to 250 per minute. The mechanism is similar to that of a rapid series of ventricular extrasystoles, all arising from the same focus. The onset and offset are usually sudden. Clinically, this arrhythmia is frequently confused with auricular tachycardia. Unlike the other arrhythmias, this one has only a single form of treatment, and that is quinidine. It is very important not to give patients with ventricular tachycardia digitalis because this drug usually makes the condition much worse and in any case cannot abolish the arrhythmia. It is in this arrhythmia that the electrocardiogram is frequently of its greatest value. By establishing the correct diagnosis, digitalis therapy may be avoided. In treating ventricular tachycardia quinidine usually is necessary in large doses because of the necessity of a quick therapeutic result and because this arrhythmia usually does not respond to small doses. We begin with six-tenths gram (ten grains) of quinidine by mouth every two hours. Occasionally following a coronary thrombosis where it is very important to revert the rhythm to normal as quickly as possible, we give one gram (fifteen grains) every two hours for several doses, but this must be done only with the realization that it is dangerous therapy to be used when absolutely necessary. In an emergency one can give quinidine intravenously.

6. A serious tachycardia which may be mentioned briefly is *ventricular fibrillation.* Fibrillation of the ventricle is usually a terminal event and is thought to be the mode of death in many patients who die of angina pectoris and myocardial infarction. Usually death takes place with such rapidity after onset of the arrhythmia that one is unable to treat it.

SUMMARY

The common arrhythmias are divided into two groups, those which are not clinically important and those which are severe. The methods of treatment of each are discussed. Certain bedside aids in diagnosis are mentioned.

ENDOCRINE THERAPY IN OBSTETRICS AND GYNECOLOGY*

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During the last ten years we have laid the foundation for the rational use of endocrine therapy in obstetrics and gynecology. Progress in this field has been so rapid that it has been difficult even for the full-time worker to keep abreast. For that reason, a summary of recent developments is in order.

The field is so broad that it is impossible to discuss anything except general principles. The application of these principles to the disorders of menstruation is illustrative of their application throughout the field. For the sake of brevity, therefore, we shall confine ourselves to a discussion of the principles underlying the treatment of functional menstrual disorders.

The first principle in the treatment of any condition is accurate diagnosis. For some years our group has been engaged in studies relating to the diagnosis of the disorders under discussion. A detailed exposition of the experimental evidence which we have obtained can be found in previous publications.[1, 2, 3] On the basis of this evidence we have formulated a working concept which may be stated as follows: "A functional menstrual disorder can result from a lesion in any of the endocrine glands or from some general constitutional condition secondarily affecting the endocrine system. Whatever the primary disease condition, it operates by producing a disturbance of the endocrine activity of the ovary, and this in turn gives rise to abnormal conditions in the lower genital tract. The endometrium indicates roughly the degree of ovarian involvement. There is no constant correlation between the primary lesion, the endometrial changes, and the type of menstrual disturbance."

From this it follows that ovarian disease, pituitary disease, thyroid disease, and other types of endocrine or nonendocrine disease may give rise to endometrial changes and menstrual disorders of identical types, and each of these types of disease may cause endometrial changes and menstrual disorders of quite different types. In other words, a menstrual disorder is not a disease but a symptom, referable to a variety of conditions. These disorders are not local disturbances; they are expressions of constitutional abnormalities and must be considered from the general rather than from the local standpoint.

The first step in the diagnosis is to rule out the possibility of pelvic disease such as carcinoma, abortion, fibroid, ectopic pregnancy, polyps, etc. In most cases this is easy enough to do. But at times difficulties are encountered. A common error is to treat symptoms resulting from a small mucous fibroid by endocrine means. Conversely, subserous and intramural fibroids may be removed and an associated endocrine lesion overlooked. Methods which can help us to avoid these pitfalls are now available. The endometrial biopsy and the uterogram deserve mention in this connection.

Having eliminated the possibility of a local organic lesion, we must determine the endocrine gland primarily affected and the presence and nature of contributory conditions, if any. For this a thorough general examination and history are required, with special attention to the constitutional status. It should never be forgotten that the elimination of the contributory disease and the proper and intelligent application of general medical measures directed at building up the general health of the patient are the keystone on which successful endocrine treatment rests.

With respect to endocrine diagnosis, our knowledge is admittedly incomplete. But it is sufficiently accurate to be of clinical value. Hormone assays and extensive laboratory tests are not necessary. The only essential special studies include endometrial biopsy, a few simple physical measurements, basal metabolism rate, and sugar tolerance test (by the galactose oral method or the usual glucose tolerance curve). Goldzieher's specific dynamic action test[8] may be of some value. These studies can be carried out as easily and as efficiently in an ordinarily well-equipped office as in the best hospital. The only special equipment required is a basal metabolism machine.

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The information necessary for interpreting the data obtainable from the history, general examination, and special studies can be found in any standard text on endocrine diagnosis. Evaluation of these data will usually lead to a working appraisal of the situation which will be found to correspond with the final diagnosis in a satisfactory percentage of cases. After the tentative diagnosis has been made, one is in a position to select the proper endocrine methods indicated in a specific case.

The endocrine preparations used in gynecology and obstetrics include the gonadotropes, the sex sterols, and thyroid.

Gonadotropes are of three kinds: (1) pituitary, (2) chorionic, and (3) equine. The pituitary gonadotropes are derived from the gland itself and consist of two fractions: follicle-stimulating and luteinizing. Ovulation is dependent upon a proper combination of the two fractions. Unfortunately, these extracts have not been produced in a sufficiently stable form to render them useful clinically. Recently we have obtained some interesting results in the human with a combination of pituitary and chorionic factors. However, this substance also is not as yet available commercially.

The chorionic gonadotrope, sometimes referred to as the anterior pituitarylike hormone (A. P. L.), is derived from pregnancy urine or human placenta. Many excellent preparations are available. In intact animals they produce ovulation and corpus luteum formation, but in hypophysectomized animals they produce only theca luteinization. These extracts have been widely used clinically, with varying degrees of success. Some investigators continue to claim exceptional results, while others, notably Hamblen,[10] doubt the therapeutic worth of these preparations. The excretion of an increased amount of pregnandiol follows their use.[1] However, it seems definitely proved that they do not produce ovulation or structural changes in the mature human ovary or endometrium.[10] Their most reliable action is a gonad-maturing one, best seen in male cryptorchidism. Their use is indicated in young girls with primary ovarian failure, and in these cases they are of great value. In elderly women with primary ovarian failure they are of less value and may be entirely worthless. They are useful in secondary ovarian failure for their stimulative action during the time when one is waiting for more specific measures to take effect. On the whole, too much has been claimed for these preparations, but, when used according to their indications, they are extremely useful. A conservative dose is 500 rat units per day while the patient is bleeding and 250 rat units twice a week during the nonbleeding phase.

Equine gonadotropes are derived from the serum of the pregnant mare. Startlingly successful results from their use have been reported by Davis and Koff,[4] Siegler,[24] and others. In our own work we have not been impressed by their efficacy in producing ovulation in the nonovulating woman, but have noted that supernumerary ovulation can be produced in the normal-ovulating woman. These preparations may perhaps have considerable value in the treatment of first-degree ovarian failure due to pituitary disease. On account of their equine origin, the danger of a reaction must be considered.

Some investigators have reported encouraging results from treatment with a combination of equine and chorionic preparations.[12, 22]

Sex sterols include the estrogens, male hormone preparations, and progesterone. The estrogens are the most important of the group and are used by practically all practitioners. Their action is threefold: (1) stimulative upon the luteinizing activity of the pituitary;[5] (2) sedative upon the nervous system,[23] and (3) trophic upon the lower genital tract.[20] Their use is indicated in pituitary failure because of their stimulative action on the pituitary, and because they substitute for the secondary deficiency in estrogen. In these cases it is usually advisable to use them in combination with thyroid, because of the action of this hormone upon the pituitary and because of the secondary thyroid deficiency which often exists.

Hamblen[11] has reported excellent results from the treatment of menometrorrhagia by the cyclical employment of 10,000 international units of estrogen daily for twenty-one days followed by five milligrams of progesterone daily for five days. Most of the patients treated had regular periods, and some continued to menstruate regularly after cessation of treatment. This form of therapy is rational when applied to the pituitary and ovarian groups. If used in thyroid cases, supplementary therapy with thyroid will be required.

On account of their action on the lower genital tract, the estrogens are extremely useful in the treatment of vulvovaginitis of infancy,[19, 21, 39] and atrophic disturbances of the menopause.[13, 17, 26] They are indicated for treatment of ovarian failure at or near the menopause or following operation. On account of their action on the nervous system, they have been used extensively in menopausal conditions, although the observations of Pratt and Thomas[21] perhaps indicate that their effect has been overestimated. In my own practice I have found them highly satisfactory.

In pituitary cases, dosages of the estrogens range from 1,000 to 10,000 international units per day (in the case of tablets for oral administration) or from one to three teaspoonfuls per day of the preparation known as emmenin. For the vulvovaginitis of infancy the dosage should be 1,000 international units daily, given in the form of a vaginal suppository. The amount necessary to control menopausal symptoms will vary according to the amount of estrogen produced by the patient's own ovaries. The average dosage ranges from 6,000 to 60,000 international units weekly. In some instances, larger amounts will be needed.

The practical value of the estrogens has been somewhat limited due to the fact that they are expensive and, further, must often be administered hypodermically. These disadvantages have led investigators to seek other substances having estrogenic activity. Many such substances have been synthesized. From the clinical standpoint, the most important of these is stilbestrol. This substance differs chemically from the natural estrogens, but has all the biologic properties which they possess. It is relatively nontoxic, effective orally and considerably cheaper than the natural estrogens. I have been fortunate in having had placed at my disposal a generous supply of this material which I have used in a large series of cases. A number of these patients had severe amenorrhea and were refractory to other forms of treatment. One milligram of stilbestrol daily for twenty-five days has produced a menstrual flow in a high percentage of these difficult cases. Mild toxic reactions, chiefly nausea and vomiting, have been observed. No serious reactions have been noted. However, others have reported reactions of such intensity that the Federal Trade Commission has for the moment refused to allow the drug to be placed on the market.

Progesterone, the hormone of the corpus luteum, is now available commercially and has been used in a variety of conditions. In my own experience and that of others, it has proved to be of some value in cases of threatened abortion or functional uterine bleeding.

The male hormone testosterone (propionate) has been the subject of intensive investigation regarding its action on the pituitary and on the female genital tract.[6, 7, 18, 27] Its chief use in gynecology is for the control of uterine bleeding. Clinical reports indicate that daily doses of twenty-five milligrams every other day for three or four days will usually control for the moment the severest forms of menorrhagia. Fairly complete control can be obtained by a monthly dose of 125 to 250 milligrams. If given in larger amounts, signs of masculinization may appear, as noted by Greenhill and Freed.[9] These signs are transitory and regress in a period of several months' time.

Thyroid is perhaps the most useful of all the hormones in the treatment of obstetrical and gynecological conditions. Its use is indicated in primary hypothyroidism and in hypothyroidism secondary to pituitary disease. In either condition the drug is given in doses sufficient to raise the metabolism to normal or until it produces untoward symptoms. It is best always to start with a small dose, such as one-half grain each day, and to continue this dosage for a period of six weeks, at which time the metabolism is determined and the dosage increased by one-fourth to one-half grain. After another six weeks, the metabolism is again determined and the dosage adjusted, being increased by small amounts only. If symptoms appear before the metabolism reaches normal, the dosage should be reduced a little for a period of six to eight weeks and then increased again. It is almost impossible to find a patient who will not tolerate thyroid if it is given in this manner. Two points should be especially stressed. In the first place, there is frequently a paradoxical fall in the basal metabolic rate in spite of marked clinical improvement. Youmans and Riven[29] consider this a sign confirming the diagnosis and indicating good results. In the second place, in most cases of true primary hypothyroidism, the drug, once started, must be continued indefinitely. If it is discontinued, these patients return to their former disagreeable status, and treatment has to be carried out all over again.

Surgery and radiation still occupy a prominent place in the treatment of menstrual disorders. Curettage is by all odds the best way to check bleeding and allow time for specific measures to take effect. The endometrium thus obtained is valuable for ruling out carcinoma and for determining the degree of ovarian involvement. In certain cases, hysterectomy associated with endocrine therapy is the most satisfactory means of treatment. I find myself frequently resorting to hysterectomy in those cases where there are associated pelvic lesions such as prolapse or cystocele, provided there is no desire for further pregnancies. Vaginal hysterectomy is the procedure of choice under these circumstances.

Radiation may be stimulative or depressive. Stimulative radiation to the ovaries has produced good results in the hands of Mazer[16] and others, and the dosages recommended apparently can do no harm. However, there is still much to be learned concerning this form of treatment. Destructive radiation of the types employed near the menopause will of course stop bleeding and make the ovarian failure complete. In a certain carefully-selected group of cases, this is the method of choice, but it should not be used in the younger age groups or in those cases in which the well-known contraindications exist.

Fibroid tumors are a frequent cause for pelvic surgery. It has been shown by Nelson[19] (previously postulated by Witherspoon[28]) that these tumors have an endocrine significance. Not infrequently we remove the tumors and ovaries and completely disregard an associated endocrine imbalance. It is, therefore, well to remember that surgery or destructive radiological procedure does not cure an endocrinopathy, but merely removes the symptom and may exaggerate the underlying endocrine process. All of these cases should be studied from the endocrine standpoint and treated postoperatively according to their indications.

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DISCUSSION

DR. B. M. OVERHOLT (Knoxville): Mr. President, Ladies, and Gentlemen: Dr. Burch is to be congratulated upon the excellent and practical manner in which he has summarized the general principles underlying endocrine therapy of functional menstrual disturbances.

Much of the disillusionment which has attended the use of endocrine products in functional menstrual disorders has been due to the following reasons: (1) that the endocrine products have been used without, first, an accurate diagnosis having been made; (2) endocrine diagnosis is far from being complete at the present time; and (3) with the rapid advance in endocrinology, the picture is sometimes confusing to the busy general practitioner. For the above reasons, Dr. Burch's paper is particularly timely.

From the standpoint of the general practitioner, the estrogens are by far the most widely used and probably the most important of the sex sterols, but their full therapeutic value has been limited, first, because of their expense, and, second, because for the most part they have been given hypodermically. For some time it has been the object of research workers to produce an estrogen which was low in cost and which could be given by mouth.

I have followed with some interest the recent literature on stilbestrol, and I was very much interested in Dr. Burch's remarks concerning it. In 1938, Dodds and his coworkers synthesized a product, diethyl stilbestrol, from stilbene. It was not a true hormone; it was a chemical substance, but it produced estrogenlike effects. It was found, for example, that, when given orally, it was fifteen to twenty times as potent as the natural estrogens, and, when given hypodermically, was two and a half times as potent as estrogen. Furthermore, it was found that it could be produced cheaply. Therefore, we had at our command a substance which fulfilled what we have been looking for, a cheap product and one which was efficient when given orally. Unfortunately, however, not all individuals could take stilbestrol. Some showed toxic manifestations. For example, Randolph gave one milligram of stilbestrol to a rather large series of cases and found that this produced toxic symptoms, usually nausea and vomiting, in about five per cent. If the dosage, one milligram, was increased, the toxic manifestations increased rather sharply, so he was generally of the opinion that, until we know more of the toxic manifestations of the drug, it should be used experimentally. Mazer believed that the drug could be placed on the market provided we would use it in doses of not more than five-tenths of a milligram daily when given by mouth, or five-tenths of a milligram hypodermically if given every fourth day, but, in view of the fact that our methods of determining slight tissue damage are still rather crude, it is probably best that the medical profession await further investigations by such men as Dr. Burch.

I would like to ask Dr. Burch two questions: (1) what percentage of his cases showed toxic manifestations to the drug stilbestrol when given in doses of one milligram daily, (2) what has been his experience with the use of ammonium chloride in premenstrual tension? I have had no experience with it, but I do have one particular case that has a rheumatic heart disease with auricular fibrillation, who is compensated on daily doses of 1.5 grains of digitalis, but about a week before the menstrual period develops, some bloating and a little nausea and swelling of the ankles occurs, and this can be prevented by increasing the dosage of digitalis to two cat units daily about seven days before the menstrual period.

Again I wish to say that Dr. Burch is to be congratulated on his very timely paper.

DR. M. W. SEARIGHT (Memphis): I too have enjoyed Dr. Burch's paper very much, and, since he more or less generalized because of the short time allotted to him, I thought possibly some specific remarks might not be out of order.

In the first place, organotherapy began in a blaze of glory, crowned with success. I refer to the use of thyroid, posterior pituitary extract, and adrenalin. It bogged down due to the deluge of products placed on the market which represented juices from various glands and organs in the body. Now, at this time, progress is being rapidly made, and opinions are being constantly changed. No one can say what the future of organotherapy will be. In the first place, one study in all products has been remarkably lacking; that is the pharmacology of the products presented for our use.

The most important product for our consideration will be the estrogens. What constitutes the pharmacology of the estrogens? Broadly speaking, it is an epithelial stimulant. This, of course, has been hinted at by its possibilities in so far as carcinogenesis is concerned. However, I do not think that we can strictly say that the estrogens are carcinogenic. In all probability, the estrogen acts by virtue of its effect upon the capillaries. We know that it produces epithelial proliferation within the uterus itself. That is one of its purposes, and it most assuredly fulfills that duty. Secondly, it produces epithelial stimulation in the vaginal epithelium. We see that by the study of vaginal spreads in castrates; we induce epithelial development by its use in infantile vulvovaginitis. Further than that, it has been used with some success in atrophic rhinitis to induce epithelial development; and, lastly, in some laboratories it has been definitely shown to decrease the photosensitivity of individuals who are highly susceptible to sunlight.

We know from those facts that the pharmacology of estrogens deals chiefly with its primary effects upon the subepithelial capillaries. When we bear in mind that every drug that we use certainly has certain pharmacological properties, it behooves us to consider further what other effects may be induced by the use of these products.

We also know that, since it has its effects upon subepithelial capillaries, it plays a part in the circulatory phenomenon known as menstruation; that is, alterations in the metabolism or production of estrogens are capable of producing various types of menstrual disorders.

One of the great uses for estrogens, in my experience, has been suddenly to bring to a close a bleeding episode in very young girls. Large doses, thirty, forty, up to sixty thousand units, can cause a young person with menorrhagia to stop bleeding within eighteen to twenty hours. It can also be used by virtue of its effects upon capillaries to arrest hemorrhage in patients even with fibromas. This is not an experiment; we have done it. The patient presents herself with menorrhagia. On physical findings she has a fibroma; thirty per cent hemoglobin. One of two things must be done: she must be taken to the hospital and transfused and prepared for operation, or we must have some way whereby we can arrest the hemorrhage and build up the patient to where operation is possible. This can be done by large doses of the estrogen.

As Doctor Burch so aptly brought out, the expense of the estrogens usually prevents us from using them in these quantities, and that brings us to the subject mentioned by Doctor Overholt, the subject of stilbestrol. Stilbestrol can be used for the same identical purpose. One milligram of stilbestrol is the equivalent of twenty-five thousand units of estrogen. Its ability to produce so-called toxic manifestations, I fear, has been greatly overrated. It has been my pleasure to have used it over a very large number of cases, and I am sure that its toxic manifestations are reflected more in the fears of the manufacturers of true estrogens than in what damage might be done to the patient. Stilbestrol can be manufactured for approximately six dollars a pound. One milligram is equal to twenty-five thousand units of estrogen. In other words, a large dose of stilbestrol will not cost as much as the oil to dissolve it and the ampule to hold it.

DR. JOHN C. BURCH (Closing): First, I want to thank Doctor Overholt and Doctor Searight for their very kind and generous discussion.

In regard to Doctor Overholt's questions and in regard to my experience with the toxicity of stilbestrol, about fifteen per cent of my cases show some nausea and vomiting. This is usually very mild. I rarely use a dose larger than one milligram per day, and I cannot give any figures as to the increase in toxicity with the larger doses.

The question regarding the use of ammonium chloride in premenstrual tension is very appropriate. This form of therapy originated during the past year with Greenhill, and he advocated that five grains three times a day be given after the time of ovulation, and reported about twelve or fifteen cases with rather startling results. I have had three or four opportunities to use the treatment, and from those cases I must say that I am not able to draw any definite conclusions as yet.

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H. H. SHOULDERS, M.D., Editor and Secretary

JANUARY, 1942

THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

A CALL TO SERVICE

Frank H. Lahey, M.D.

President of American Medical Association

The establishment by the government of a Procurement and Assignment Agency properly places the responsibility for obtaining medical personnel in the hands of the medical profession. The success of this agency depends entirely on a few basic features: the complete cooperation of medicine in what even the most doubting must now admit is a truly national emergency; an unqualified willingness to serve the country however, wherever, and whenever required; and a firm purpose to establish the fact that medicine intends to maintain its place in the forefront as it always has when a patriotic example is of such significance.

THE WAR AND THE PEACE

The problems of primary concern to every American at the moment are the problems connected with the winning of a world war.

Up to December 7, 1941, the object was preparedness. It was an effort toward preparedness in time of peace. The tempo of the whole effort at military preparedness is altered by the fact that war has been declared. We are now a nation at war.

The problems which confront the medical profession at the moment are many. Doctors must play a large and varied part in the program. The doctor plays a part in determining whether a man is fit to be a soldier. He plays a part in correcting the defects of those who are not fit. He plays a part in keeping the soldiers fit. He plays a part in taking care of the casualties of war. Furthermore, his part will never end. In addition to this, he must play a part in taking care of the family the soldier leaves behind. That part may be bigger because of the absence of the soldier, for the reason that psychological problems arise which might not have arisen except for the military effort. He plays a vital role in the matter of morale at home and in the Army.

It is a fact worthy of note that the medical profession was the first of many organized groups in the United States to appreciate the importance of military preparedness in advance of the declaration of war and to take effective action. All are familiar with the action taken by the House of Delegates of the American Medical Association in 1940 and of the activities of the medical Preparedness Committee and of the various state committees in compiling information which was brought into instant use the moment the need arose.

The Committee of the American Medical Association had no governmental authority. It was a voluntary committee, of a voluntary organization, making a voluntary effort in behalf of the freedom of the people of the United States.

By the time a year rolled around (1941) it was apparent that there was need for an agency endowed with governmental authority to function as a procurement and assignment agency in the field of medical care. That agency has been created and endowed with the necessary authority.

From the statement by Dr. Frank Lahey, chairman of the Procurement and Assignment Agency, it is apparent that the government is depending upon doctors to volunteer.

The Army and the Navy determine the number of doctors needed to serve the Army and Navy. It is in proportion to the number of soldiers. Roughly, the ratio is 6.7 doctors per thousand men in the Army.

The Army and the Navy have determined also the physical standards to be met by those who are commissioned. It has determined the age group that is desired and, in so far as is possible, the number of specialists in the various fields.

It is obvious, of course, that the Army and Navy need a reserve from which can be drawn the medical personnel to serve the troops as they are taken.

A considerable amount of time elapses between the date a doctor makes application for a commission and the date the commission is finally issued.

A Procurement and Assignment Agency has been set up with advisory committees to make policies and decisions with reference to the whole question of medical preparedness.

It is not likely that these decisions when once made will be altered. For example, there is a decision with reference to medical students that they will remain almost continuously at school and thus complete the course in three calendar years. This is an example of the stepping up of the tempo of all activities relating to military preparedness.

This agency is in position to weigh the needs of the Army against the needs of the community with reference to any one man to the end that civilian services be preserved to the fullest extent possible.

The successful operation of the plan depends upon the cooperation of the entire medical profession.

Much has been said of late about the winning of the peace. Of course, all recognize that the war must be won before the peace can be won. The fight is for the preservation of all the freedoms related to our American way of life. We, therefore, have an additional responsibility in seeing to it that the freedoms in our American way of life as related to the practice of medicine are not destroyed by an emergency activity. This is but an act of high patriotism. We cannot fail to recognize that there are those who will use the emergency as an excuse for the creation of a bureaucracy or an agency which could become so entrenched during the emergency it could prevent the winning of the peace in so far as medicine is concerned.

THANKS TO THE JOHNSON CITY CHRONICLE

The following is an editorial which appeared in the *Johnson City Chronicle*, December 17, 1941. The profession of Tennessee will read this editorial with interest and a deep sense of appreciation.

On behalf of the profession of Tennessee, the editor is expressing appreciation to the editor of the *Johnson City Chronicle.*

"Tri-County Medical Society Boon to East Tennessee

"America, manning its ramparts as never before and marshaling every resource to better down the Axis aggressors, takes strength in the knowledge that its industrial capacity is the greatest in the world, its scientific research the most advanced, and its people the most patriotic when aroused.

"Our government knows that it can depend upon all groups and all professions to give first place to the common cause, second to self.

"One of these professions, the medical profession, is especially deserving of trust on the strength of its past achievement, its present service, and its aspirations for the future. In war, as in peace, it serves humanity unselfishly, bringing to prince and pauper the best knowledge of prevention and cure of disease that scientific research produces.

"Upper East Tennessee is blessed with outstanding physicians. Should the war ever come to this section in all its horror, or should war-borne epidemics strike, our people know their physicians would not fail.

"It has been our observation that members of the medical profession of the Johnson City area are unusually alert to progress in their field. Many of our doctors attend state and national medical conventions regularly; not a few avail themselves of postgraduate courses in leading medical schools, and all, of course, are regular readers of the medical journals.

"Within the past year or so the medical men of Washington, Carter, and Unicoi Counties have combined their associations, in the belief that by frequent meetings and full and frank interchange of views they will be able to secure more unity and harmony in every phase of their work. The combined organizations are known as the Tri-County Medical Society.

"The society, the charter of which was granted April 9, 1941, was organized from the Washington County Medical Society which was founded June 6, 1903; the Carter County Medical Society which was founded July 27, 1928; and the Unicoi County Medical Society which was founded January 11, 1938. Tri-County is the fifth largest medical society in the state association, having more than seventy members on its rolls, and although its existence attracts relatively little attention, except from its own members, it is a valuable and useful county institution. The meetings of the society are held each month on the first Thursday night, six in Johnson City, and the remainder in the other two counties. Each month this newspaper publishes announcements of these meetings and through the efforts of the officers and members of the organization we have noted that the doctors have secured for each of their meetings an outstanding specialist as speaker. To mention only a few of these—Dr. Herbert Acuff, chest specialist, Knoxville; Dr. Chevalier L. Jackson, bronchoscopist, Philadelphia, Pennsylvania; Dr. Austin I. Dodson, urologist, Richmond, Virginia; Dr. Marcellus A. Johnson, orthopedist, Roanoke, Virginia; and during the year the president of the state association, Dr. Hiram Laws, visited the society and commended the officers and members for their excellent work.

"These scientific programs are not only well attended by the members, but attract a large number of physicians from Southwest Virginia, Western North Carolina, and elsewhere in East Tennessee. The cooperation and interest among this medical group are noted from the fact that a short time ago the society was guest of the medical personnel of the Veterans Administration, at which time Dr. John Williams and Dr. George Harrell, professors of medicine at the Bowman Gray School of Medicine, Winston-Salem, North Carolina, were guest speakers. It is being planned, we understand, to make the meeting with the Veterans Administration staff an annual affair.

"From time to time criticisms of our medical profession are heard, but we are sure that men who have dedicated their lives to the relief of human suffering regard their calling as a sacred trust and conduct themselves accordingly. We congratulate the Tri-County Medical Society upon its achievements and hope for each and every member continued usefulness and success."

FROM THE PROCUREMENT AND ASSIGNMENT AGENCY

ENROLLMENT FOR SERVICE IN THE ARMY AND NAVY

Last week *The Journal of the American Medical Association* published an urgent request to all physicians of the United States to fill out the questionnaire published in that issue and mail it at once to Dr. Sam F. Seeley, Executive Officer of the Procurement and Assignment Service, Washington, D. C., indicating their availability to serve the nation in the present emergency. The response to this call to the medical profession to date has been highly gratifying. The following statement to that effect, with additional instructions, has been received from the Directing Board of the Procurement and Assignment Service:

The response of the physicians of the country to the Procurement and Assignment Service request for enrollment of those now ready for immediate service in the Army or the Navy is highly gratifying. All names are being processed, and those who meet the present demands of the surgeons general will receive application forms and authority to appear for physical exam-

ENROLMENT FORM FOR PROCUREMENT AND
ASSIGNMENT SERVICE FOR PHYSICIANS

Dr. Sam F. Seeley, Executive Officer
Procurement and Assignment Service
New Social Security Building
4th and C Streets S.W.
Washington, D. C.

Dear Doctor Seeley:

Please enroll my name as a physician ready to give service in the Army or Navy of the United States when needed in the current emergency. I will apply to the Corps Area commander in my area when notified by your office of the desirability of such application.

Signed ____________________________

1. Give your name in full, including your full middle name:

2. The date of your birth:

3. The place of your birth:

4. Are you married or single?

5. Have you any children? If so, how many?

6. Do you believe yourself to be physically fit and able to meet the physical standards for the Army and Navy Medical Corps?

7. Have you filled out previously the questionnaire sent to all physicians by the American Medical Association?

8. When and where were you graduated in medicine?

9. In what state are you licensed to practice?

10. Do you now hold any position which might be considered essential to the maintenance of the civilian medical needs of your community? If so, state these appointments:

11. Have you previously applied for entry into the Army or Navy Medical Service? If so, state when, where and with what result (if rejected, state why).

Signature____________________________

Date____________________________

Address____________________________

Fill out this blank, tear out and send to Dr. Sam F. Seeley at the above address.

ination at an early date. All who are now ready for immediate duty should forward applications to the Procurement and Assignment Service at once. It is not the intention of the Procurement and Assignment Service to register every physician, dentist, and veterinarian at the present time. Only those available for immediate assignments should register at this time. The physical requirements of all military, governmental, industrial, and civil agencies will be published in national and state journals immediately. On the basis of this information every physician, dentist, and veterinarian will be able to make a self-appraisal of his physical qualifications. Within a few weeks the Procurement and Assignment Service will mail to all individuals a form on which they will be asked to state their preferences for assignment to all agencies of national defense which require medical, dental, and veterinary personnel and for service in communities in public health and other civil categories. In this way every physician, dentist, and veterinarian of the country will be able to lend maximum support to the national emergency. In order to meet the expanding needs of the military services, every physician immediately available for duty should mail his application blank to the Procurement and Assignment Service at once. All others will be given an opportunity to volunteer in the near future.

FRANK H. LAHEY, M.D., *Chairman.*
JAMES E. PAULLIN, M.D.
HARVEY B. STONE, M.D.
HAROLD S. DIEHL, M.D.
C. WILLARD CAMALIER, D.D.S.
SAM F. SEELEY, *Major, M. C., U. S. Army, Executive Officer.*

NEWS NOTES AND COMMENTS

CHANGE OF ADDRESS

Joe D. Anderson, Nashville General Hospital, to Spring Hill, Tennessee.

Wm. T. McPeake, 1808 White Avenue, Knoxville, to 48 Medical Battalion A, A. P. O. 252, Fort Benning, Georgia.

G. R. Evans, Greeneville, to Dublin, Virginia (care Stonega Coal and Coke Company).

C. F. Varner, 1304 Union, Memphis, to Station Hospital, Camp Shelby, Mississippi.

A. H. Chamberlain, 1471 Central, Memphis, to Raleigh, Tennessee.

J. L. Houston, 1840 Sherwood, Petersburg, Virginia, to Station Hospital, Fort Sam Houston, Texas.

W. J. Hillas, 1910 East Ninth Street, Tucson, Arizona, to 2744 East Adams Street, Tucson, Arizona.

RULES GOVERNING THE AWARD OF "THE FOUNDATION PRIZE" OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS, AND ABDOMINAL SURGEONS

1. "The award which shall be known as 'The Foundation Prize' shall consist of $150.00."

2. "Eligible contestants shall include only (a) interns, residents, or graduate students in obstetrics, gynecology, or abdominal surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching obstetrics, gynecology, or abdominal surgery."

3. "Manuscripts must be presented under a nom de plume, which shall in no way indicate the author's identity, to the secretary of the association, together with a sealed envelope bearing the nom de plume and containing a card showing the name and address of the contestant."

4. "Manuscripts must be limited to 5,000 words, and must be typewritten in double spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis."

5. "The successful thesis shall become the property of the association, but this provision shall in no way interfere with publication of the communication in the journal of the author's choice. Unsuccessful contributions will be returned promptly to their authors."

6. "Three copies of all manuscripts and illustrations entered in a given year must

be in the hands of the secretary before June 1."

7. "The award will be made at the annual meeting of the association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the association. The successful contestant must meet all expenses incident to this presentation."

8. "The president of the association shall annually appoint a committee on award, which, under its own regulations, shall determine the successful contestant and shall inform the secretary of his name and address at least two weeks before the annual meeting."

JAMES R. BLOSS, M.D.,
Secretary.

418 Eleventh Street, Huntington, West Virginia.

MEDICAL SOCIETIES

Anderson-Campbell Counties:

The Campbell County Medical Society met in regular session in the Peoples National Bank, La Follette, June 26, 1941, at 11:00 A.M. Members present were Drs. U. S. Carden, J. P. Lindsey, J. W. Presley, R. L. Gallaher, A. A. Baird, R. C. Pryse, F. J. Slemmons, J. L. Heffernan, and H. C. Chance, La Follette, and Drs. J. M. Cox and O. E. Ballou from Anderson County.

The meeting was called to order by Dr. U. S. Carden. The object of the meeting was to perfect plans for the consolidation of Anderson-Campbell and adjacent counties which may desire to affiliate with these counties into one medical society.

Previous to this meeting Dr. S. R. Miller of Knoxville, who is a member of the State Council, named the following committee:

Drs. J. S. Carden, La Follette; N. C. Watts, Jellico; J. S. Hall, Clinton; and J. M. Cox, Lake City, to draft a constitution and by-laws which this committee thinks may be fitting to this merger. This was read and approved with some minor changes.

The society proceeded to the election of officers by appointing the following nominating committee: Drs. Chance, Presley, and Cox, who recommended that the present officers of the Campbell County Society be elected with one additional vice-president from Anderson County.

The following officers were nominated and elected:

President—Dr. R. L. Gallaher, Caryville.

First Vice-President—Dr. G. B. Brown, Jellico.

Second Vice-President—Dr. A. W. Bishop, Norris.

Secretary-Treasurer—Dr. M. L. Davis, La Follette.

The president appointed the following censor committee: Drs. H. C. Chance, J. S. Hall, and O. E. Ballou.

The time of meeting of this society was set for the last Thursday of each month at 7:00 P.M. Meetings for the months of December, January, February, and March will be held in La Follette. The remaining meetings of the year will be held in different towns represented by the society as they see fit.

There being no further business to transact, the meeting was adjourned to meet the last Thursday of July in La Follette.

J. M. COX, M.D.,
Acting Secretary.

Bedford County:

Following is a list of officers for the year 1942:

President—W. H. Avery, Shelbyville.

Vice-President—M. L. Connell, Wartrace.

Secretary-Treasurer — James N. Burch, Shelbyville.

Delegate—B. L. Burdette, Shelbyville.

Alternate Delegate—James N. Burch, Shelbyville.

Censors—S. S. Moody, Shelbyville (one year); B. L. Burdette, Shelbyville (two years); Alfred Farrar, Shelbyville (three years).

JAMES N. BURCH, M.D.,
Secretary.

Blount County:

The annual banquet was held on Wednesday, December 31, 1941. The presidential address was delivered by Dr. J. Frank Manning, after which the new officers for 1942 were installed as follows:

President—C. B. LeQuire, Maryville.

Vice-President—Lea Calloway, Maryville.

Secretary-Treasurer—Robert H. Haralson, Maryville.

Censors—C. C. Vinsant, Maryville (three years); E. H. Lowe, Maryville (two years); W. N. Dawson, Maryville (one year).

There were present at this banquet twenty-four doctors and their wives.

Fayette-Hardeman Counties:

Officers for 1942 are as follows:

President—R. L. Cobb, Bolivar.

Vice-President—W. D. Martin, Western State Hospital.

Secretary-Treasurer—George W. Jackson, Western State Hospital.

Giles County:

Officers for 1942 are as follows:

President—J. U. Speer, Pulaski.

Vice-President—L. A. Edmundson, Bethel.

Secretary-Treasurer—T. F. Booth, Pulaski.

Delegate—Joe B. Wright, Lynnville.

Alternate Delegate—W. K. Owen, Pulaski.

Grundy County:

New officers for 1942 are as follows:

President—J. W. Clower, Winter Garden, Florida.

Vice-President—W. A. Brewer, Monteagle.

Secretary-Treasurer—T. F. Taylor, Monteagle.

Haywood County:

Newly-elected officers for 1942 are as follows:

President—W. D. Poston, Brownsville.

Vice-President — Robert E. Berson, Brownsville.

Secretary-Treasurer — Roy M. Lanier, Brownsville.

Knox County:

December 9—"Diabetes," by Dr. H. C. Long. Discussion by Drs. W. S. Austin and E. R. Zemp.

December 16—The annual election of officers was held. The speaker was Major F. Fowler of Atlanta, Georgia.

January 6—The annual presidential address on the subject, "Lest We Forget," was given by Dr. Jesse C. Hill.

R. B. Wood, M.D.,
Secretary.

Monroe County:

The newly-elected officers for 1942 are as follows:

President—L. L. Barnes, Sweetwater.

Vice-President—W. J. Cameron, Sweetwater.

Secretary-Treasurer — T. M. Roberts, Sweetwater.

Censor—R. M. Price, Sweetwater.

T. M. Roberts, M.D.,
Secretary.

Polk County:

President—W. Y. Gilliam, Copperhill.

Vice-President—T. J. Hicks, Copperhill.

Secretary-Treasurer—F. O. Geisler, Isabella.

Delegate—F. O. Geisler, Isabella.

Alternate Delegate—T. J. Hicks, Copperhill.

Putnam County:

New officers for 1942 are as follows:

President—Lex Dyer, Cookeville.

Vice-President—J. F. Terry, Cookeville.

Secretary-Treasurer — Thurman Shipley, Cookeville.

Delegate—W. A. Howard, Cookeville.

Alternate—Lex Dyer, Cookeville.

Robertson County:

The Robertson County Medical Society met December 16, 1941, at the hospital in regular session. Those present were Drs. J. S. Freeman, J. W. Wilkinson, W. W. Porter, A. R. Kempf, Springfield; Dr. R. H. Elder, Cedar Hill; W. S. Rude, Ridgetop;

Dr. L. E. Johnson, Adairville, Kentucky; Dr. Charles Trabue, Nashville.

The president, Doctor Elder, introduced Doctor Rude, who sponsored the program for the month. He in turn introduced Doctor Trabue, who gave an excellent paper on "Carcinoma of the Colon." Discussion by Doctors Rude and Wilkinson; closed by Doctor Trabue.

Dinner was served by Mrs. McAdams, superintendent of the Robertson County Hospital, and as usual was delightful.

After a round-table discussion adjournment was in order.

The next session will be held at the hospital in January.

JOHN S. FREEMAN, M.D.,
Secretary-Treasurer.

Shelby County:

December 16—The annual dinner of the Memphis and Shelby County Medical Society was served at the University Club, after which election of officers was held.

January 6—Report of Hospital Committee. Reports of all the standing committees. "The Patient, the Reason for the Hospital," by Dr. E. H. Carnes. There was a general discussion of the entire program.

New officers for 1942 are as follows:

President—E. M. Holder, 899 Madison Avenue, Memphis.

President-Elect—W. L. Rucks, 1074 Madison Avenue, Memphis.

Vice-President—E. R. Hall, Exchange Building, Memphis.

Secretary—A. F. Cooper, Goodwyn Institute Building, Memphis.

Treasurer—E. G. Kelly, 899 Madison Avenue, Memphis.

Delegates—E. M. Holder, W. L. Rucks, A. F. Cooper, W. C. Chaney, E. D. Mitchell, Sr., A. F. Porter, Jr., Webb Key, W. H. Qualls.

Alternates—C. G. Andrews, J. P. Carter, C. D. Allen, J. D. Evans, J. M. Dorris, Battle Malone, III, E. G. Kelly, J. H. Francis.

Smith County:

President—A. O. Parker, Brush Creek.

Vice-President—E. D. Gross, Chestnut Mound.

Secretary-Treasurer—Thayer S. Wilson, Gordonsville.

Delegate—R. E. Key, Carthage.

Alternate Delegate—R. E. Garrett, Dixon Springs.

Sullivan-Johnson Counties:

The newly-elected officers of this society for 1942 are as follows:

President—W. A. Wiley, Kingsport.

Vice-President, Sullivan County—D. D. Vance, Bristol.

Vice-President, Johnson County—R. O. Glenn, Mountain City.

Secretary-Treasurer — F. L. Alloway, Kingsport.

Executive Committee—W. M. Gammon, Bristol.

Censor—J. V. Hodge, Kingsport.

D. D. VANCE, M.D.,
Secretary.

White County:

New officers for 1942 are as follows:

President—E. B. Clark, Sparta.

Vice-President—C. B. Roberts, Sparta.

Executive Secretary — B. L. Upchurch, Sparta.

Williamson County:

Officers for 1942 are as follows:

President—Harry Guffee, Franklin.

Vice-President—B. T. Nolen, Franklin.

Secretary—W. F. Roth, Jr., Franklin.

OTHER MEDICAL SOCIETIES

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, DECEMBER 5, 1941

1. Case Report: "A Case of Subacute Bacterial Endocarditis with Apparent Cure," by Dr. Richard W. Blumberg.

A case of subacute bacterial endocarditis in a twelve-year-old girl with patent ductus arteriosus was reported as an apparent cure after ten months of continuous treatment with sulfonamide compounds. Sulfathiazole was first used for three weeks, and due to toxic reaction sulfanilamide was started and continued for the next nine months. Different types of therapy in this disease and the prognosis of each were discussed.

This case was discussed by Drs. Allen Kennedy and Horton Casparis.

2. "A Study of Optic Nerve Terminals (Boutons Terminaux) in the Lateral Geniculate Nucleus in the Cat," by Dr. W. R. Spofford.

The variation in normal nerve endings (boutons terminaux) in the spinal cord is so great that recognition of changes in boutons after nerve section (Hoff, '32) is difficult. To investigate the experimental changes in boutons under simpler conditions, one optic nerve was sectioned in each of a series of twelve cats. The lateral geniculate nuclei were prepared by reduced silver methods, and adjacent normal and affected laminae were compared. Since the type of boutons in affected laminae are indistinguishable from those in the normal, it is concluded that the "bouton technique" for tracing nerve pathways is not reliable.

This paper was discussed by Drs. Sam Clark and W. de Gutierrez-Mahoney.

3. "A Review of Seventy-Five Cases of Eclampsia with Particular Reference to Late Cardiovascular Renal Effects," by Drs. G. S. McClellan, W. D. Strayhorn, and Paul M. Densen.

In the last fourteen years seventy-five cases of eclampsia have been diagnosed in the Vanderbilt University Hospital. There were forty-nine primiparae and twenty-six multiparae. The immediate maternal mortality was 13.3 per cent. None of the patients who died had had any prenatal care. Follow-up observations were made on these patients. The cases of hypertension which developed among the post-eclamptics were compared with four sets of control cases. In general, the evidence in this study does not indicate that individuals who have had eclampsia develop hypertension in any undue proportion. However, further observations are required and this paper is considered a preliminary report.

This paper was discussed by Drs. Alvin E. Keller, Edgar Jones, Paul M. Densen, and Albert Weinstein.

ABSTRACTS OF CURRENT LITERATURE

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Hematoma of the Vagina Associated with Severe Perineal Tears. Eugene G. Lipow, M.D., Flathead Agency, Dixon, Montana. American Journal of Obstetrics and Gynecology, December, 1941, 1077, 1079, 1080.

Vulvovaginal hematoma is, in itself, a rare condition, but, combined with a complete rupture, unilaterally, of all the muscles of the pelvic floor with the exception of the gluteus maximus without a tear of the vaginal wall, has not, so far as the literature is available, been reported previously. It is interesting to note that a vulvovaginal hematoma developed a few minutes post partum. This hematoma, before and during examination, probably burrowed along fascial planes, and the sensation of something giving away was due to rupture, either of some of the perineal muscles or of fascia, which may have been caused by purely mechanical pressure transmitted through the fluid contents of the hematoma. However, the manipulation during the examination was gentle, and a more likely hypothesis would be that the hematoma burrowed through the fascial planes, separating and dissecting them from their normal close relationship. Moreover, while this hematoma was becoming progressively larger ragged tears, thinning of muscle due to pressure of the increasing globular mass, finally rupture of the fascial sheaths and muscle tissue ensued. After the initial rupture of portions of the muscles, these tears were further enlarged, not only by the hematoma, but by additional blood from the torn structures. During the process there was a period free from pain, but the recurrence of the pain occurred probably at the time when rupture of a partially-torn muscle was completed. A great force is not necessary to tear muscles even as large as the levator ani, and probably the pressure exerted by a rapidly-forming hematoma was sufficient to do this. It will be observed that the clitoris and rectum were uninjured. This was presumably due to the fact that the hemorrhage did not ramify and burrow in those directions. Furthermore, these structures could easily be pushed out of the way by the mass of blood. The peritoneum was also untouched. It is likely that this may be due to the fact that the peritoneum is elastic, can stand much stretching, and there are not relatively inelastic attachments. The gluteus maximus is too strong a structure to be torn in this manner.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Size of the Blind Spot in Glaucomatous and Normal Eyes in the Water-Drinking Test. P. E. Tichmirov. American Journal of Ophthalmology, December, 1941.

Enlargement of the blind spot in glaucomatous eyes after drinking a large quantity of water is attributed by the author to peripapillary edema developed as a result of increased capillary permeability. In response to the test the blind spot of normal eyes remained unaffected, while in glaucomatous eyes it became enlarged within three hours. In operated eyes the blind spot enlarged in response to the test, although the tension was lowered, indicating that the surgical procedure does not restore normal capillary permeability.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Prevention of Dental Caries by Massive Doses of Vitamin D. Ralph Howard Brodsky, D.M.D.; Bela Shick, M.D.; and Herman Vollmer, M.D., New York. American Journal of Diseases of Children, December, 1941.

It has been shown that a single massive dose of vitamin D, 600,000 U. S. P. units, cures rickets and tetany, and does it more promptly than smaller daily doses. The authors studied the effect of a single massive dose of vitamin D in the prevention of dental caries. They chose 200 children in the Sea View Hospital who had tuberculosis or who had been in contact with the disease. The incidence of caries and gingival lesions seems to be the same for tuberculous and nontuberculous children.

The children were divided into three groups. Group A, the control group, received no added vitamin D; group B received 305,000 U. S. P. units of vitamin D and 2,455,000 U. S. P. units of vitamin A in thirty cubic centimeters of fish liver oil concentrate; group C received 600,000 units of vitamin D in the form of crystalline vitamin D_2 in one cubic centimeter of oil.

All groups had the same hospital diet, the same routine as to fresh air, sunshine, etc. They were comparable as to age, oral hygiene, the number of deciduous and permanent teeth, and incidence of caries at the first examination in the beginning of the study. Serial roentgenograms were made of the teeth of each child at the beginning and end of the study period.

At the end of the year study period 101 children remained in the hospital and showed the following results: thirty-nine cavities had developed in the teeth of the control group A; there were thirteen new cavities in the teeth of group B; and six cavities had developed in the teeth of group C who had received the single massive dose of vitamin D. Realizing the need for the confirmation of these observations by study of a larger number of cases, the authors feel that the incidence of dental caries may be markedly decreased by massive doses of vitamin D.

None of the children developed any toxic manifestations from the single massive dose of vitamin D. Repeated urinalyses did not reveal any calcium-containing casts, and the administration of massive doses of vitamin D appears to be safe. Further studies are necessary to determine the duration of the protection achieved by this procedure, but in view of the experience in rickets prophylaxis with massive doses of vitamin D, it may be expected that two or three massive doses per year may be required for optimum dental caries prophylaxis.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

The Treatment of Carcinoma of the Ovary. R. I. Walter, A. L. Bachman, William Harris. American Journal of Roentgenological and Radiological Therapy, Vol. 45, No. 3, p. 403, March, 1941.

The successful treatment of ovarian carcinoma is a difficult problem. To study the disease and appraise the methods used, the stage of the disease must be recognized.

Stage One.—Primary tumor unilateral and completely removable, no visible metastases.

Stage Two.—Local metastases present, but completely removable with primary tumor so that no visible disease remains.

Stage Three.—Local metastases present, but only partially removable with primary tumor.

Stage Four.—Cases with advanced carcinomatosis peritonei in which only exploratory celiotomy or removal of large tumor masses may be performed as diagnostic and palliative measures.

In reported groups many had to be discarded as of no statistical value. Surgery alone can be used with justification only in stages one and two. Inadequate radiation is of questionable value, but when adequate postoperative radiation is given, good results are obtained. In a group of cases, including all stages treated by surgery alone, 23.8 per cent were alive at the end of one year and 6.3 per cent at the end of five years, whereas in the series operated and given adequate postoperative radiation, eighty-seven per cent were alive at the end of one year and twenty-nine per cent at the end of five years.

By adequate radiation is meant at least 1,200 r given to three pelvic ports within approximately one month and usually repeated within a year. The factors used were: 180 to 200 kilovolts, five-tenths to two millimeters copper filtration and target skin distance of fifty to seventy centimeters.

Despite adequate postoperative radiation, cases that have reached stage four have a very poor prognosis.

Cases grouped as grades three and four constituted 82.1 per cent of the author's series of seventy-three cases, while the low-grade malignancies, grades one and two, formed only 17.8 per cent.

Summary

1. A clinical classification of ovarian carcinoma according to stage of progression is presented, and the necessity for its use in evaluating therapeutic results stressed.
2. A critical analysis of reports of other investigators whose cases were amenable to classification is made.
3. Our material consists of 124 cases of ovarian carcinoma which are reviewed with particular reference to therapeutic results.
4. The primary operative mortality was 9.8 per cent.
5. Sixty-three patients with ovarian carcinoma were treated by surgery alone. Of these, four, or 6.3 per cent, survived five years.
6. Sixty-one cases were treated by surgery plus postoperative radiotherapy. Thirty-one patients received moderately large amounts of radiation (considered as "adequate" in this series) and seven (twenty-nine per cent) were alive five years. Twenty received "inadequate" radiation dosage and two (ten per cent) survived five years.
7. The major factor in prognosis and determination of type of therapy to be employed is the clinical stage of progression of disease. Morphological classification and histological grading appear to be of minor importance.
8. Maximal dosage of radiation therapy should be employed whenever possible. Small, "palliative" amounts play a minor role in the treatment of ovarian carcinoma.
9. The rationale for permitting a normal uterus to remain in situ and employing it as a radium carrier in order to increase the intrapelvic dose is discussed.
10. The administration of radiation therapy preoperatively in stage four cases of proved carcinoma is advocated.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II, M.D.
188 South Bellvue, Memphis

The Evaluation of Laboratory Aids in the Diagnosis of Hyperthyroidism. E. Perry McCullogh, M.D., and R. W. Schneider, M.D. Surgery Clinics of North America, 25: 1241 (October), 1941.

The basal metabolic rate is the most important of all laboratory procedures in the diagnosis of hyperthyroidism. The graphic method is preferred and two runs should be made in each test, taking care that it is done under basal conditions and that the machine is mechanically perfect. In hyperthyroidism the rate is almost invariably greater than plus ten per cent and usually more than plus fifteen per cent. During remissions due to iodine therapy, it may fall to zero and rarely during natural remissions the rate may approximate zero, but rises again during exacerbations. Some conditions other than thyroid disease may cause variations in the metabolic rate. Anxiety, neurosis or neurocirculatory asthenia may cause rates around plus twenty per cent. Malignant hypertension may cause hypermetabolism, but this condition always shows a diastolic pressure of over 100 millimeters of mercury which is an important differential point. High metabolic rates may accompany arteriovenous aneurysm or extensive metastases from carcinoma. Pernicious anemia and leukemia may show unusually high rates of metabolism. A few drugs such as dimitrophenol cause an elevation of metabolic rate. Excessive secretion of the metabolic hormone of the pituitary gland and cases of acromegaly may result in hypermetabolism. Also overactivity of the adrenal cortex or adrenocortical tumors may cause metabolic rates up to plus thirty per cent. Administration of androgens such as testosterone produces an increased metabolism.

Blood cholesterol is found to be low in severe hyperthyroidism, but this finding is more constant in exophthalmic type of goiter. If the estimation of cholesterol is found to be above 200 milligrams per cent, the elevated metabolic rate is not likely to be due to hyperthyroidism. High cholesterol values, on the other hand, are almost constantly found in cases of low metabolic rate due to thyroid deficiency.

Recently the oral galactose tolerance test has been used in cases of hyperthyroidism. In normal persons the maximal blood levels remain below thirty milligrams per cent, whereas hyperthyroid cases show values usually greater than this figure. It is not accurate, however, where there is hepatic insufficiency.

Blood iodine levels are elevated in seventy per cent of cases of hyperthyroidism. The elevation is more constant where the disease has persisted for less than one year due to an increased secretion of iodine after this time. The creatine-creatinine ratio has no great practical value, but is maintained by some to show a greater excretion of creatine when hyperthyroidism is present. The glucose tolerance curve in hyperthyroid cases shows a normal fasting level, rapid rise to 200 milligrams per cent or above with a return to normal by the third hour. Lymphocytosis is frequent, but it is a relative finding due to neutrophilic leukopenia. There is usually an increase sensitivity to epinephrine in cases of hyperthyroidism, but interpretation of this test is difficult to determine accurately.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

Disease of the Right Kidney as a Cause of Obstructive Jaundice. Benj. Derrah and D. R. Kaufman. Journal of Urology, November, 1941.

There have been reports in the literature of jaundice associated with right nephroptosis. However, that obstructive jaundice may be caused by right renal disease has never been emphasized.

Hutchinson states that the jaundice associated with nephroptosis is probably due to a downward displacement of the third part of the duodenum with a stretching of the common bile duct, a displacement of the gall bladder with a kinking of the cystic duct, and torsion of the duodenum and bile duct.

Scholl reported a case of nephroptosis with infected hydronephrosis and jaundice cured of the infection and jaundice by ureteral catheter drainage.

By careful dissection of the area, by gastrointestinal barium X-rays, and by injection of the common bile duct, associated with retrograde pyelography, the close relation between the anterior surface of the renal pelvis, the head of the pancreas, the second part of the duodenum, and the common bile duct has been demonstrated. From the close proximity of these organs, it is clearly possible to get a blocking of the ampulla of Vater, resulting in jaundice, from an infected right kidney.

These authors report two cases, each of which had calculus pyonephrosis associated with jaundice. Both cases were cured of the jaundice by operation for the kidney condition.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

. . . and as one business man to another—
We feel quite proud of the fact that our dairy is licensed to serve
VITEX VITAMIN D MILK
to the homes in this community.
GREEN VALE MILK CO.
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Laundry . . . Dry Cleaning . . . Storage
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ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods
ANTHONY'S MILK
● Grade "A" Pasteurized ● Homogenized ● Soft Curd ● Vitamin "D"
With 400 U.S.P. Vitamin D Units (Activated Ergosterol) Added Per Quart Under A.R.P.I. Process

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. Hiram A. Laws, Jr., James Bldg., Chattanooga.
President-Elect—Dr. J. B. Stanford, 899 Madison Ave., Memphis.
Vice-President for West Tennessee—Dr. Glenn D. Batten, Jackson.
Vice-President for Middle Tennessee—Dr. John S. Freeman, Springfield.
Vice-President for East Tennessee—Dr. C. W. Friberg, Johnson City.
Secretary-Editor—Dr. H. H. Shoulders.
Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville (1943).
Dr. J. B. Stanford, 899 Madison Avenue, Memphis (1942).
Dr. E. R. Zemp, Walnut Street, Knoxville.
Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga (1944).
Dr. L. W. Edwards, Nashville.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
Second District—Dr. S. R. Miller, Knoxville.
Third District—Dr. A. M. Patterson, Chattanooga.
Fourth District—Dr. J. T. Moore, Algood.
Fifth District—Dr. V. S. Campbell, Murfreesboro.
Sixth District—Dr. H. S. Shoulders, Nashville.
Seventh District—Dr. C. D. Walton, Mt. Pleasant.
Eighth District—Dr. Geo. W. Brasher, Jackson.
Ninth District—Dr. E. H. Baird, Dyersburg.
Tenth District—Dr. W. B. Burns, Memphis.
Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—
- Dr. E. G. Wood, Knoxville; East Tennessee (1942).
- Dr. H. B. Everett, Memphis; West Tennessee (1943).

Alternates—
- Dr. E. T. Newell, Chattanooga; East Tennessee (1942).
- Dr. E. C. Ellett, Memphis; West Tennessee (1943).

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THE PROBLEM OF TUBERCULOSIS IN CHATTANOOGA AND HAMILTON COUNTY*

CARL A. HARTUNG, M.D., Chattanooga

The treacherous disease, tuberculosis, affects every man, woman, and child in Hamilton County from a medical, public health, or economic standpoint. In 1939 there were sixteen deaths in Chattanooga from automobile accidents. Regarding this, one of our well-known citizens was heard to state: "We would all be greatly alarmed if sixteen of our citizens had died this year by reason of smallpox. We would deprive ourselves of every luxury and willingly comply with regulations of the health authorities to stamp out such a plague." However, during this same period, 154 had died of tuberculosis in Chattanooga. It has been variously estimated that we spend twenty-five to thirty thousand dollars annually to regulate driving in Chattanooga. To this, I take no exception, but from a comparative standpoint, we should be willing to spend nine to ten times as much for the prevention of tuberculosis. Practically all the money spent at the present time on tuberculosis is for symptomatic treatment and hospitalization with very little for prevention.

Shortly after undertaking the study of tuberculosis in this community, three outstanding facts were quite obvious: (1) that the problem of tuberculosis is not appreciated by either the medical profession or the general public; (2) that there is a serious lack of cooperation and coordination of all agencies dealing with the tuberculosis problem either directly or indirectly; (3) that, in order to bring this great public health problem under control, we will have to spend more money today in order to save money five, ten, fifteen years from now.

It is startling to realize that only a certain percentage of the patients who are placed on the waiting list of Pine Breeze Sanatorium are ever admitted to any hospital. (They die before their names are reached on the waiting list.) The problem at this stage is primarily an economic or social one, while the greatest danger has been the number of years before the terminal stage that these patients have been a public menace.

All cases of tuberculosis should be reported, according to the law, to the city or county boards of health, as soon as the definite diagnosis is made. This should be done whether or not the patient is to be treated at home under the care of a private physician or an application filed for admission to Pine Breeze Sanatorium. I am certain that I voice the opinion of health authorities that this is not a procedure whereby patients are taken away from private physicians, as many patients that can be adequately taken care of at home relieve an already overcrowded situation. It is only when such a patient refuses to comply with the private physician's instructions and becomes a health menace to his family and the general public that the boards of health feel that it is their duty to "intercede" and exercise the right of quarantine. Certainly the public expects and should be entitled to this protection.

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*Read before the Chattanooga and Hamilton County Medical Society, Chattanooga, October 4, 1941.

To declare persons with tuberculosis nonresidents or aliens, which automatically excludes them from admission to the tuberculosis hospital, is not doing a good public health job. Some provision should be made to isolate them until they can be removed from the community. Frank Howard Richardson, in a recent treatise on tuberculosis, states: "Every open case of tuberculosis infects from sixty to one hundred per cent of the members of the household in which he lives."

Infants up to two years of age, during the first four to six months' contact, often die of miliary tuberculosis or tuberculous meningitis. The argument of why force people with active tuberculosis into Pine Breeze Sanatorium, or force those patients to stay at the tuberculosis hospital against their wishes when we cannot take these cases who are anxious to come in and who will be cooperative, is a hard argument to combat, but it offers no solution to the problem. We need regulatory measures to prevent the patient with active tuberculosis from "signing out," to either force the active patient to come into the tuberculosis hospital or maintain strict quarantine in their homes, in which the contact with children is broken, and to provide isolation for all nonresidents until they can be removed from the community. At the present time there is legislation in the city to prevent patients with tuberculosis from leaving the hospital if there is danger of contacting members of the family. No such legislation regarding county patients exists. In Chicago, Illinois, active cases are taken out of the community where there are children under sixteen years of age, and, in Washington, D. C., two patients who signed out of the municipal sanitarium were recently tried for violation of their sanitation code. Both were sentenced to 360 days with recommendation that it be spent in the sanitarium. Personally, I think that when a private right becomes a public menace it is time to forfeit that right. Regulatory measures should be carefully studied and sponsored by the boards of health, the Public Health Federation, and the Chattanooga and Hamilton County Medical Society. If this is not done, tuberculosis will become a growing social and economic problem with other groups initiating the regulatory measures, and I am afraid the medical profession will think it is another form of state or government medicine.

The four major points in any campaign against tuberculosis are education, diagnosis, treatment, and rehabilitation. Since seventy-five to ninety-five per cent of the patients entering all tuberculosis sanitariums are in the moderately-advanced or far-advanced stages, it certainly brings out the need for early diagnosis. Hilleboe, in the *American Review of Tuberculosis*, December, 1936, on his study of mortality of discharged patients from 1885 to 1935, concludes that persons with minimal tuberculosis have a risk of dying increased approximately four times, moderately advanced sixteen times, and far advanced forty times over that of persons in the general population from which the patients were drawn. A case of minimal tuberculosis would require six months or less hospitalization with practically one hundred per cent cure, whereas moderately-advanced or far-advanced cases require two to six times the length of hospitalization. Cures are doubtful in the latter group, and when they do occur, the patient is under a physical handicap for the rest of his life. This, again, emphasizes the need of early diagnosis and hospitalization.

It has been demonstrated by the National Tuberculosis Association that the economic loss to the family and to the community, plus the cost of treatment, amounts to $10,000 for each death from tuberculosis. In Chattanooga there were slightly over 150 deaths from tuberculosis during 1939; therefore, on this basis, the economic loss to the community was in excess of one and a half million dollars.

Education.—We need to teach the people of this community that the Pine Breeze Sanatorium is one of the best tuberculosis hospitals in this part of the country and to tell them of the excellent work that is being done in that institution. The public should be educated as to what it costs to operate such an institution and that more money is needed wherewith to do a better job, to free this community of the greatest public health menace—tuberculosis. I can see the need to better educate the public as to the grave danger of tuberculosis and the contagiousness of the disease. I can see the need of more public health nurses so that contacts can be examined sooner and discharged patients followed regularly, to see that they return to their family physicians or clinic for periodic examination and check-up. I can see the need of better and quicker relief with better housing for discharged indigent patients. I can see the need for closer supervision of the people working in public places who handle food, as a large percentage of the applicants for entrance to the tuberculosis hospital are waiters, waitresses, cooks, servants, barbers, restaurant operators, etc. I can see the need for better cooperation and coordination of our public hospitals, relief and welfare agencies, and social service organizations with the city and county boards of health and the Pine Breeze Sanatorium. I can see the need for better teaching in our medical schools about tuberculosis and the need for refresher courses to keep some of our physicians alert about diagnosing tuberculosis, especially in the early stage. I can see the need for more hospital beds, with proper maintenance so that tuberculosis patients can be admitted sooner and that eventually there will be no waiting list.

In Cincinnati, Ohio, the death rate from appendicitis was reduced from an average of thirty to eleven and five-tenths persons per 100,000 by means of a five-year educational program, according to Dr. Mont R. Reid. I am certain a great deal could be accomplished regarding tuberculosis. I would like to see the newspapers carry a box in a daily column, showing the total number of deaths of tuberculosis and other contagious diseases, somewhat along the line of the traffic accident report, for the next few years, as their contribution in helping to bring tuberculosis under control.

Diagnosis and Treatment.—It is a well-established fact that we should all strive for early diagnosis with immediate hospitalization unless the patient can be adequately treated in the home by a physician who thoroughly understands tuberculosis.

Rehabilitation.—This along with education has been sadly neglected. Dr. J. C. McIntyre, in the bulletin of the National Tuberculosis Association, August, 1938, states that aftercare or rehabilitation of tuberculous patients is an almost untouched field, and cites the fact that less than 1,000 patients are rehabilitated from 125,000 patients discharged from institutions yearly. At present we are making healthy loafers out of weakened workmen. It has paid to rehabilitate the deaf and the blind, so why not the discharged tuberculous patient?

Obstacles in the control of tuberculosis, discussed by H. I. Spector, in the bulletin of the National Tuberculosis Association, February, 1939, stated: (1) That the most important handicap in the eradication of tuberculosis is the shortage of hospital beds and that any attempt to control the dissemination of tuberculosis will prove ineffective as long as the unhospitalized patients continue to spread the disease. According to him, a ratio of two beds per death is only a safe minimum for any community. The local ratio is one and four-tenths to one. (2) Late diagnosis. Limited budgets have held up continuous case-finding activities. (3) The low financial status of the patient in numberless instances and his unwillingness to stop work. (4) The inability to recognize the disease in the early stages by the general practitioner retards tuberculosis eradication. (5) The high incidence of disease among workers exposed to dust with a high silica content. (6) A very important deficiency in our present control consists of our failure to rehabilitate the arrested cases economically. Follow-up study of discharged tuberculous patients shows that the percentage of relapse ranges from fifteen to sixty-five per cent.

I cannot add anything to this, as it applies to our local condition, except to say that the whole may be summarized in one sentence, "lack of sufficient money to do a good job." What I have said is in no way intended as a criticism of any individual or any group of individuals, but merely presents a true picture of tuberculosis as it exists so that some plan may be formulated to bring this great public health problem under control. Education, with regulatory measures, if necessary, offers our best approach. But the best weapon in the world is ineffective unless it is used. Indifference, not opposition, is the greatest enemy of progress. We must look to our state, county, and municipal authorities for correction of our present situation, and improvement will come largely through the influence exerted by public opinion. I know of no better way to mold public opinion than through a well-organized and well-directed educational program sponsored by the antituberculosis leagues, the boards of health, and the Chattanooga and Hamilton County Medical Society. It is no disgrace to contract tuberculosis. The disgrace is upon those who fail to cooperate in helping to prevent tuberculosis.

THE TREATMENT OF HEMORRHOIDS*

M. W. HOLEHAN, M.D.,† Memphis

In so far as methods of treatment are concerned, few pathologic conditions hold so many pitfalls as do hemorrhoids. Nothing could be farther from the truth, in fact, than the conception that cure is a simple matter. Each case presents an individual problem, and in all, whether mild or severe, numerous factors must be taken into consideration if serious consequences are to be averted and a satisfactory anatomic and functional result is to be obtained.

The treatment of hemorrhoids is of two general types: palliative and surgical. In determining which of the two is most suitable in a given case, one should be guided by the location, stage of development and local complications of the hemorrhoids, and the condition of the patient.

Occasionally, one is justified in employing only palliative measures. Small internal hemorrhoids accompanied by slight bleeding or pain, without other evidence of disease, may be treated effectively by the use of an oil laxative, opium suppositories, and warm enemas, and having the patient follow a diet containing an abundance of fruit and green vegetables, with a limited amount of proteins. Also a small thrombotic external hemorrhoid, even though a source of discomfort, may resolve following the use of an intestinal lubricant, and spasticity of the sphincter incident to inflammatory conditions of the anal outlet may be relieved by finger dilatation. These procedures may be especially advisable as a temporary expedient during pregnancy or for elderly or debilitated patients.

Injection of the hemorrhoidal mass with some type of solution is a palliative measure which may be employed for uncomplicated internal hemorrhoids in a limited number of cases. The procedure is based upon the theory that an inflammatory reaction is thus produced within the mass, causing fibrosis and contracture of the venous spaces. The technic is as follows:

The only preparation necessary is a complete evacuation of the rectum by a laxative or enema. The patient is placed in the left lateral position, the hips near the edge of the table, and the right leg is fully flexed at the knee and hip. A medium-sized Brinkerhoff speculum is inserted, and the slide withdrawn two-thirds of its length and rotated until the hemorrhoid is presented into the opening. The mucosa covering the hemorrhoid is dried and touched with an antiseptic solution at the point of injection. A gooseneck extension, a short, sharp needle, and a glass Luer syringe for accurate measurement of the drug are essential. The needle is inserted at the base of the hemorrhoid and advanced to its center. The solution is introduced slowly in an amount varying from five to thirty minims, depending upon the size of the hemorrhoid. If the needle has penetrated the muscularis, the injection will be painful; if the needle is too superficial or an excessive amount of the solution is introduced, blanching of the mucosa will be observed. When the procedure is carried out in the office, the hemorrhoids should be injected one at a time at intervals of five to seven days. The patient should lie down for several hours after each injection. If necessary, mineral oil or some other bland laxative should be given for the relief of constipation.

Under no circumstances should injection be applied to external hemorrhoids or to internal hemorrhoids complicated by infection or inflammation. In the presence of such complications, one cannot destroy all the disease process, and the outcome may be recurrence of the hemorrhoids, painful proctitis, nodular mucosal tumors, or sloughing and consequent abscess and fistula formation. The result may appear entirely successful for months, or even years; yet, sooner or later, the patient will require operation. At the John Gaston Hospital and the Proctologic Clinic in Memphis, we discourage injection by the interns and students, fearing that those who subsequently practice in small towns wherein there are no hospitals would use the method with little discretion. Instead, all charity patients in the hospital are treated surgically, experience having shown that both time and money are thus saved.

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*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.

†From the Department of Proctology, University of Tennessee.

Although injection is a legitimate practice, recognized by the profession, it is my opinion that, when hemorrhoids are sufficiently troublesome to require injection, they are also sufficiently troublesome for excision. I have lost several patients who insisted upon injection rather than assume responsibility for the outcome. The object of treatment is complete eradication, and one can be reasonably sure of attaining this only by excision of the offending lesions.

The thrombotic external hemorrhoid, when found alone, presents the simplest of the surgical problems from the standpoint of technic. The procedure may be carried out in the doctor's office under local anesthesia with a one-half per cent solution of novocain. After the usual preparation, the needle is inserted at the outermost aspect of the thrombus and allowed to penetrate only just beneath the skin. An interval of five minutes is permitted to elapse before beginning the operation. An elliptical incision is then made over the thrombus, radial to the anal margin, and the mass with the overlying skin is dissected out. If necessary, the subcutaneous vessel may be sutured, though the wound should be left open in order to prevent recurrence of the clot by enclosure of blood which oozes into the cavity. Some surgeons employ a straight incision and merely shell out the clot. Here also, however, one invites recurrence when the wound edges fall together.

Following removal of the hemorrhoid, the patient experiences immediate relief, but, unless the wound receives meticulous care, infection is likely to supervene just as in more extensive operations. The surgeon should, therefore, apply fresh dressings daily and should instruct the patient in taking precautions against contamination and in measures to promote healing.

For the usual case of hemorrhoids, the procedure which best fulfills all pathologic and anatomic requirements is ligation and excision. With this method one may remove both external and internal hemorrhoids, and at the same time take care of complications, such as marginal tags, infected crypts, hypertrophied papillae, polyps, fissures, fistulae, ulcers, and abscesses. The procedure is carried out in the following manner:

After receiving the proper preoperative care, the patient is placed in the lithotomy position, and the external operative field is thoroughly cleansed. In the choice of the anesthetic, one should be governed by the physical condition of the patient. Low-spinal anesthesia is preferable, however, in that it affords better sphincter relaxation. Gas anesthesia causes the veins and mucous membrane to assume a bluish tint and thus obscures the true pathologic condition.

When the sphincter is sufficiently relaxed, the rectum is gently dilated with the finger and the bivalve speculum. Skin clamps are then attached to the four quadrants of the anal margin and slowly drawn outward until the hemorrhoids come into full view. Before undertaking the operation, the rectal cavity should be cleansed and thoroughly inspected for the presence of other abnormalities. If there is any indication of hidden disease, a probe should be used to find infected crypts and fistulous openings.

Usually, three internal hemorrhoids will be observed, one in each posterior quadrant and one anteriorly. The hemorrhoid which is selected for removal first is elevated with hemostats and clamped at its base with curved artery forceps. A double ligature of No. 0 chromic catgut is threaded on a curved needle and passed through the tissue one centimeter below the forceps. Beginning external to the anal margin, an elliptical skin incision is made and continued inward along the clamp, removing all the diseased area down to normal tissue. If the hemorrhoid extends externally, the skin incision should be sufficiently large and deep to include this mass also. The ligatures are drawn together and tied anteriorly and posteriorly, and the stump is brought down and sutured into the marginal wound. This procedure conserves the mucous membrane, covers the raw spaces, and promotes healing.

The remaining hemorrhoids are removed in like manner, with care that each incision is made radially from the sphincter, and that ligation and excision be effected at different levels to avoid the formation of a circular scar above the anus. If spastic, the anal sphincter may be partially or wholly divided, the incision being made straight across the muscle near the posterior commissure. Suture of the skin margins is both unnecessary and undesirable; the edges will fall together upon contracture of the sphincter, and tight closure would prevent drainage and lead to infection and abscess formation. At the conclusion of the operation, the rectum should be cleansed of all blood clots. Thus, should an excessive amount of blood be found on the dressings subsequently, one might be sure that it came from the wound and take steps to remedy the condition.

At the John Gaston Hospital it is our custom to inject five to ten cubic centimeters of nupercain in oil subcutaneously immediately after operation and to follow this by massage of the area to prevent the oil from pooling and causing an abscess. A gauze wick, well lubricated with nupercain ointment, is then inserted into the rectum and allowed to remain twenty-four to forty-eight hours. This wick serves a threefold purpose: first, it helps to control capillary bleeding; second, it maintains the mucosal stumps in proper position and promotes anatomic healing; and, third, because of the anesthetic properties of the ointment, it adds to the patient's comfort. Gauze packing is then applied and held in place by a perineal pad, which in turn is affixed with strips of adhesive.

If the patient has had a general anesthetic, only surgical liquids are permitted during the first twenty-four hours. If a regional or local anesthetic has been given, full liquids are allowed the first day, a soft diet on the second, and a full diet on the third. Cascara and mineral oil are given on the second day; if this does not induce a bowel movement, it should be followed by castor oil or some other cathartic. Regular elimination is essential after the third day; otherwise, the rectum may become impacted, endangering the operative field and causing the patient excruciating pain.

The patient is dismissed from the hospital on the third or fourth postoperative day, with instructions to take hot sitz baths three or four times daily, to observe proper hygiene of the region, and to wear a cotton pad to absorb the irritating drainage which usually accompanies rectal operations. He should return for observation at least three times a week, until healing is complete and there is no likelihood of the development of a fistula, abscess, fissure, or adhesions.

The success of the above operation depends upon the strict observance of several cardinal points:

1. Conservation of the skin and mucosa in so far as is feasible to prevent stricture.
2. Excision of external hemorrhoids and skin tags with an elliptical skin incision radial to the anal outlet.
3. Protection of the anal sphincter from injury.
4. Protection of the tissues from trauma through rough handling, bruising by clamps, and excessive use of ligatures.
5. Observance of proper measures, both at operation and during convalescence, to prevent infection.
6. Frequent examinations postoperatively until recovery is complete.

In this connection, it is not amiss to reiterate that hemorrhoids are not always a local disease. On the contrary, infected hemorrhoids, no less than infected tonsils and teeth, often give rise to systemic disorders. The author has observed several patients in whom this fact has been confirmed by the disappearance of apparently unrelated symptoms following hemorrhoidectomy. For example, one patient was promptly relieved of frequent, severe orbital headaches of three and one-half years' duration, following removal of large, prolapsing, though painless, hemorrhoids. Another had been troubled for several years with indigestion and ulcers of the mouth and was compelled to restrict his diet on this account. On examination, a draining fistula with an opening into an anal crypt was discovered. The hemorrhoids and fistula were excised, and within a few weeks he was able to eat any food he desired without experiencing any digestive disturbance.

A third patient gave a history of having suffered gastric pain at frequent intervals for thirty years, the attacks having begun following a gastroenterostomy for gastric ulcer. When he came to operation for prolapsing hemorrhoids, the rectal skin was found to be so fibrous from the long-standing disease process that it could hardly be incised with the scalpel. Only two months have elapsed since the operation, and the patient reports that practically all his upper abdominal distress has disappeared.

Particularly interesting was the case of a woman who had been bedridden for several months on account of indigestion, low blood pressure, a severe and intractable anemia, and extreme weakness. One year previously she had had several large hemorrhoids injected, and at examination massive inflammatory hemorrhoids were found, though no evidence of hemorrhage. Two months after hemorrhoidectomy she was able to remain up throughout the day and go wherever she wished. Now, six months postoperatively, she takes a full diet with no ill effects, and her blood count remains normal without the aid of supportive measures.

These experiences are further proof of the necessity for bearing in mind the possibility of hemorrhoids as a causative agent in chronic systemic disorders.

In any case, one is safe in saying that no operation is more gratifyingly successful than hemorrhoidectomy when properly performed. Unfortunately, a general impression among the laity that rectal operations are excruciatingly painful and often unsuccessful has caused many patients to suffer for years before seeking relief or to accept some lesser procedure with the result that their discomfort was only aggravated. This impression can be corrected by giving patients the benefit of proper surgery of the offending hemorrhoids when they first come for treatment, if at all feasible. When it is learned that the operation is painless, hospitalization is brief, and that functional difficulties can be overcome, and often other organic or systemic disturbances relieved as well, we shall have gained the confidence of these patients and shall seldom be confronted by unfavorable complications.

DISCUSSION

DR. D. W. SMITH (Nashville): Mr. President and Members of the Tennessee State Medical Association: I think of all papers on the program this is perhaps one of the most timely. There is no disease that is more universal than disease of the anal and perianal region. Doctor Holehan was kind enough to send me a copy of his paper. He has covered the subject thoroughly. I have no chief objections to any procedures which he has advocated. I shall attempt to reaffirm or to reiterate the things which he has said.

Doctor Holehan has divided the treatment into palliative and surgical. Palliative treatment might be defined as a process in which the lumen of the veins is obliterated through the formation of scar tissue, and any agent that is introduced into the tumor mass, not into the vein, which will produce scar tissue sufficient to obliterate the lumen of the vein, can be classed as a palliative treatment. The agent which, to my mind, is most universally used and by far the safest is quinine and urea hydrochloride, the technic of which I shall not discuss.

What are the indications for palliative treatment? Personally, I feel that palliative treatment has a definite field. In the aged or in the individual who is debilitated by wasting diseases, on whom surgery is not feasible, I think the patient is entitled to relief through a sclerosing procedure. The number that fall into this group is very, very small, because the contraindications to this form of treatment rule out most patients.

To restate, the contraindications are: external hemorrhoidal tissue, a chronic fissure in ano, fistula in ano, the presence of hypertrophied papillae, or the presence of a chronic proctitis.

Most persons who seek relief for anal diseases will have some if not all of those contraindications present. For that reason, the group on which you can use a sclerosing treatment is naturally a very small group.

The surgical procedure is certainly the choice of treatments. I should like to say that there is another group who for one reason or another refuse surgical procedures. They may not have any contraindications to the palliative treatment that I have mentioned, but, unless you do give those people relief until it is convenient for them to have a surgical procedure performed, they will land in the hands of the so-called rectal specialist, with whom we are all familiar, namely, the chiropractor or osteopath.

The surgical technic that is most universally used today is dissection, ligation, and excision. I am glad to see the old clamp and cautery go. The day will come when you will see them displayed in the archives of instruments. The cautery destroys more tissue than is usually claimed, resulting in scar tissue formation, painful postoperative results, and contraction of the anal canal. One should inspect for the relative groups of hemorrhoidal tissue at the time of operation. For the average case there will be three groups, a large group at the left lateral, two groups on the right, and in the occasional case there will be a group in the posterior mid-line. After dilatation, not divulsion, the largest group should be removed first. The internal hemorrhoid is elevated by the application of a clamp, and a point is selected on the perineal skin to begin the dissection. At this time I would like to emphasize the importance of getting out external to the sphincter sufficiently far that, when the sphincter regains its control, there will still be an opening sufficient for postoperative drainage, which will lessen the pain and will lessen the chances for postoperative complications.

As you have selected the point to make your incision on the skin external to the sphincter, you pick it up with a clamp, you carry your dissection lateral to the clamp, either side, up to the mucocutaneous line. This dissection is sufficiently wide to include the external hemorrhoidal tissue, and quite frequently it is necessary to dissect down to and expose the external sphincter muscle. If you fail to do this, you have left in most cases the painful agent that brought him to your office.

After you have dissected the hemorrhoidal tissue up to the mucocutaneous line, apply a crushing clamp. As the doctor has said, place a suture through the mucosa one centimeter beneath the clamp. Then remove the hemorrhoidal tissue superficial to the clamp and place one or two other sutures through the stump and over the clamp; remove the clamp, and, as he has already stated, pull the two ends together and tie them.

The disposition of this stump determines two important things. It determines, first, the amount of tissue that can be removed, and, second, the elasticity of the anal canal after the patient has completely healed. Instead of turning the stump loose and letting it drop back proximal to the external sphincter, the stump should be pulled over the sphincter and anchored with suture on needle at the outer border of the external sphincter, thereby covering the greater part of the raw surface which was produced by the process of dissection.

Dr. Will Mayo once said that a poor anorectal operation with good postoperative care will give a better result than a good operation with no postoperative care. I know of no place that postoperative care should be more meticulous than in this particular area. Routinely, after the patient has regained sensation of the perineum, I apply hot wet packs of 110 degrees Fahrenheit of either saline or plain water. This is continued as long as the patient is in the hospital. It is continued in the home for at least four hours each day, providing there is any evidence of infection.

I allow them to have a liquid diet the first day, a soft diet the second day, and, if the patient gives a history of severe constipation, I attempt to encourage stool by some form of lubrication, but after the first stool I try with the greatest effort to encourage the patient to have a stool without the aid of any drugs whatever. The presence of oil draining over the operative fields makes infection more probable. The second reason for the patient to have a formed stool is that it dilates the anal canal, and, after the patient has completely healed and has a large or norml stool, breaking down of the scar tissue or splitting of the operative field will not occur.

Once and sometimes twice a week I will introduce a Brinkerhof anoscope into the anal canal to inspect or to break down any cicatricial tissue that might be formed. After these patients have returned to their homes, I have them come to my office at least three times each week and some of them daily. In the office the anal canal is irrigated with witch hazel or saline, and I apply some drug, aqueous solution of metaphen, or five or ten per cent mercurochrome. This is continued until all wounds are healed. I continue the supervision of the patient over a period of two or three months, having him return at intervals of two, four, and six weeks before he is discharged from my care.

DR. J. M. STOCKMAN (Knoxville): Doctor Holehan and Doctor Smith have not left much for me to say. They have told practically all the complications that you can get in the surgical procedure. Of course, there are a few things that we may do differently, but I do not think they are too outstanding at that.

As for the selection of cases, as to which method you might proceed with in treatment, Doctor Jelks will jump on us with both feet if we mention injection, but I think it does have a place in proctology. In addition to those cases that Doctor Holehan and Doctor Smith have mentioned, we like to examine the hemorrhoidal areas to determine if they have external support. If there is adequate external support present so that what scar tissue you might produce will have a firm base on which to unite, that case probably will get just about as good results as with surgery. However, you still have the chemical inflammation that you will produce with any injection stage. We do not inject into the lumen of the blood vessel. I think that is tending to be discarded now.

As for the anesthetic, Doctor Holehan prefers a spinal anesthetic. We think that caudal is a little better, and it is ideal, we believe, for rectal operations. It gives us adequate anesthesia, as far as relaxation is concerned. The only trouble is that, if you are in a hurry, it takes about eight minutes to obtain full effect.

At operation we also introduce, instead of the anesthetic in oil, even before an incision is made, diothane in benzyl alcohol. This is a product of Merrell and Company of Cincinnati, and we are doing experimental work for them to find the efficacy of it. To date we have experienced no abscesses at all except one possible case that we did not lay to the solution itself. The anesthetic holds for approximately three to five days. It reduces the pain, I believe, from fifty to seventy-five per cent. It does not make an insensitive rectum. We will have to admit that there is no such thing as a painless rectal operation, but in as much as this reduces it that much and we run into very little danger of pooling, because it is not an oily solution, and in as much as every proctologist that I have talked with will admit almost one per cent postoperative abscesses with the oily solutions (however, I do not know whether Doctor Holehan will do that or not; in fact, I do not know whether he has any or not), but I have talked to three that I know particularly, and they will admit about one per cent occurrence of abscesses, therefore diothane has an advantage.

As for the use of drains following operations, I think that the most important thing that I can say is never use a plug. The use of plugs adds more to the true severe intense postoperative pain than any procedure that you could do, because you are placing the sphincter immediately out of its normal contour. The gauze that is usually wrapped around the plug is often incorporated with any granulation tissue that might be developed, and the removal of this naturally pulls off the granulation tissue, and sometimes noticeable if not severe bleeding occurs.

We like to remove our drains in twenty-four hours. We call them drains; they are merely a piece of rubber tissue. We will not even trust a piece of gauze in the anus following rectal operation. It is a piece of rubber glove about an inch wide with a safety pin through the end so we will not miss it. This will not be incorporated in the granulation tissue; it comes out easily and without any pain. It is merely a telltale sign, letting us know if there is any postoperative hemorrhage, as the colon will not fill up first with blood, but it will run out the rubber drain.

After twenty-four hours, when we remove the rubber drain, we like to use hot glycerin compresses. We think that glycerin has a twofold activity; it is oily, and it will, therefore, hold the heat; it is hygroscopic, and, therefore, it tends to decrease any postoperative edema early. Glycerin compresses are efficacious in the treatment of practically any type of swelling around the rectum other other than those infectious processes and abscesses, etc.; I mean by that excessive swelling of an external thrombotic hemorrhoid where the swelling is completely out of line with the amount of thrombosis.

We use hot glycerin compresses for three or four days. By that time we do not need them, sitz baths will be enough.

I would like to re-emphasize what Doctor Smith has said about the persistent, intelligent postoperative care. Once the operation is over, you have just started. There is always some granulation tissue to be burned off later on, I do not care whether you use a cauterizing agent or various pastes in these patients to keep down the granulation tissue. We like to insert the finger in the freshly-operated rectum in twenty-four hours to break up adhesions. This reopens our incision. We do not then get a closure from side to side, and we reduce the possibility of an incarceration of the infection.

Once more I would like to compliment Doctor Holehan on his excellent paper.

DR. JOHN L. JELKS (Memphis): I appreciate this work by these young men. It is good work. Doctor Holehan knows that I have a preoperative treatment, namely, Jelks' highball, materially, castor oil. Nothing else cleans the gut. We use plain catgut, never chromic. It stays there too long and irritates. Hemorrhoids begin with cryptitis infection. The Lord smote the Israelites in the hinder parts and gave them hemorrhoids. Why? They got to living too high.

I have no time for this injection treatment of hemorrhoids. Two quacks over in Eastern Arkansas pay me from one to two thousand dollars a year—abscesses and fistulae.

Hemorrhoids begin with a cryptitis and infect the anal surrounding tissue. Those crypts are lined with epithelium. You can put a probe down in there in almost any case of hemorrhoids, and it is infected. If you do not excise that crypt, you do not cure your patient.

All those veins about the anus, almost invariably in chronic hemorrhoidal disease, are diseased, dilated, and infected. Pick these up and snip them off as you would some fishing worms and cut them out.

I used to make the incision that Doctor Smith referred to posteriorly. Now I make it over here (in the right or left quadrant). I saw Mr. Mummery in London do it, and I found I was less liable to have hemorrhage. Make it through the skin, divide portions of that muscle, if that muscle is rigid, and you will not have pain postoperatively. You do not need to have pain after a hemorrhoidectomy; it is bosh. I laugh at my nose and throat men. I frequently demand extractions of teeth or removal of tonsils before I will remove a hemorrhoid. I want to cure my patients. I cannot do so otherwise. I laugh at these tonsil men and tell them: "Now, I bet you that my patient will not suffer as much with his anus as he does with his throat."

DR. M. W. HOLEHAN (closing): I want to thank Doctor Smith and Doctor Stockman for their splendid discussions of my paper. I think they were very thorough and very kind to me. I also want to thank Doctor Jelks for his discussion. I feel indebted to him for all the help and instruction that he has given me when I first started the specialty of proctology, and it is with his technic with modifications that I have picked up in different cities that I now do my hemorrhoid operations. Again I wish to thank the doctors for their discussion of my paper.

RUPTURE OF THE INTERVERTEBRAL DISCS*

R. EUSTACE SEMMES, M.D., and FRANCIS MURPHEY, M.D.,† Memphis

Three years ago we presented a paper to the Tennessee State Medical Association on this subject. Our report at that time was based on our experience with fifteen cases of rupture of the intervertebral discs causing low back pain and sciatica. Since then the clinical picture has become clearer, and there have been many refinements in the diagnosis and treatment of this condition.

We have been repeatedly amazed at the ever-increasing number of patients with this syndrome. We have seen well over 500 and have operated upon over 200 of them. We have come to believe, therefore, that the vast majority of patients with the syndrome, low back pain and sciatica, have ruptured intervertebral discs, and that it is certainly one of the most common conditions which affect the nervous system. It has been found that ruptures of the discs in the cervical spine may cause cricks in the neck and pain in the arm and shoulder. Similar lesions of the discs of the thoracic spine may cause intercostal pain. Since the incidence and clinical picture of the last two conditions are somewhat vague, the remainder of this paper will be concerned with ruptures of the intervertebral discs in the lower lumbar region.

This condition is usually caused by a definite injury or strain to the back, although in perhaps a fourth of the patients, no history of such an injury or strain can be obtained.

When the fourth or fifth lumbar disc ruptures, low back pain, either sudden or gradually increasing, occurs usually as the first symptom; to be followed sooner or later by pain radiating down the course of the sciatic nerve to the lateral aspect of the ankle or to the heel. Occasionally pain occurs in the lower quadrant of the abdomen or the groin and is frequently mistaken for either abdominal or urogenital diseases. Numbness occurs on the lateral aspect of the leg and occasionally actual anesthesia.

The pain in the back and down the leg or in the groin is usually made worse by bending, lifting, sneezing or coughing, and in some cases by making any movement of the body.

The most common of all signs of this condition is pain in the hip and back on straight leg raising. There is also muscle spasm in the back and a scoliosis of the lumbar spine with the convexity towards the side of the lesion. Hypesthesia to ice between the knee and the heel on the lateral aspect of the leg likewise may be found in a majority of the cases. The ankle jerk is usually absent or markedly diminished when the fifth lumbar disc is ruptured, but when the fourth lumbar disc is involved, the ankle jerk is ordinarily normal or only slightly reduced. Tenderness over the sacroiliac region and along the course of the sciatic nerve is a common finding. Jugular compression reproduces the pain in about fifty per cent of the cases. Rarely one may see atrophy of the calf muscles, a foot drop, or paralysis and anesthesia of the lower legs and sphincters.

X-ray may show a scoliosis of the lumbar spine and a loss of the lumbar lordosis.

Spinal-fluid examination generally reveals an increase in the total protein, but may be normal.

Metastatic malignancies and other destructive lesions of the spine, pelvic malignancies, spondylolistheses, cauda equina tumors, and injuries to the sciatic nerve may produce this syndrome and should be ruled out in every case.

Because of the pain in the lower abdomen and groin, ruptured disc may be mistaken for appendicitis or ureteral colic.

Before the entity of ruptured intervertebral disc was known, low back pain and sciatica were attributed to foci infection, vitamin deficiency, sacroiliac strain, sciatic neuritis, arthritis, and many other diseases. We must now revise our ideas concerning all of these. It is our firm belief that the theory of foci infection as a cause of radiating pain must be forever relegated to the junk heap as an example of the credulity of the medical profession and of the general public as well. There is no evidence that vitamin deficiency of any type has ever caused a unilateral radiating pain. Neither has there ever been any proof that sacroiliac injuries could produce this syndrome. Sciatic neuritis as a cause of these symptoms, except that which follows a definite trauma to the nerve, has never had any pathologic basis. Finally, we even have come to doubt that hypertrophic arthritis might cause this syndrome. It is possible that a spur which compresses the nerve root before it emerges from the intervertebral foramen may produce such symptoms, but it must be an extremely rare thing, for we have never encountered it in any of the operations that we have done for low back pain and sciatica. Certainly there is no conceivable way in which lipping along the anterior edge of the vertebral column could produce such pain.

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*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.

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Two years ago at the Cushing Society we reported that contrast media, namely, lipiodol, air, and thorotrast, were no longer needed to make a diagnosis of this condition. As a matter of fact, by clinical means one is able to make a higher percentage of correct diagnoses than with the use of these substances. Since January 1 of this year, we have operated upon twenty-five cases with a single error in diagnosis.

It is a well-known fact that the vast majority of people with ruptured discs may recover without operation. It is our opinion, therefore, that, if a patient presents himself with a history of pain of only a short duration, rest in bed or conservative orthopedic treatment should be instituted and actual removal of the disc by operation should be reserved for those individuals who are and have been incapacitated for some time by the pain of this lesion.

The operation itself carries practically no danger, there being no mortality in our series. By removal of a small amount of bone, sometimes no bone at all, the ruptured disc can be removed, the length of the patient's stay in the hospital reduced, and the possibility of weakening his back obviated. The results of the operation are very gratifying. Approximately eighty-five per cent of the patients get complete relief from symptoms. Others may have some persistent posttraumatic operative neuritis. Approximately six to eight per cent of the patients get a recurrence of symptoms due to protrusion of more of the intervertebral disc, but these recurrences are now being reduced by a more complete removal of all of the nucleus of the disc.

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In conclusion, therefore, it may be said that rupture of the intervertebral disc is by far the most common cause of the syndrome, low back pain and sciatica. The diagnosis of this condition can be made more accurately by clinical means than by contrast media. Conservative treatment should be instituted unless the patient has a history of recurrent attacks and is disabled by them. The operation is highly satisfactory and the danger relatively slight. There can be no further justification for the diagnosis of such conditions as foci infection, vitamin deficiency, sacroiliac disease, and sciatic neuritis as a cause of low back pain and sciatica.

DISCUSSION

DR. R. W. BILLINGTON (Nashville): Mr. Chairman and Gentlemen: Doctor Murphey has given us a very beautiful demonstration of a condition which we have only in the last few years come to recognize as a definite pathological entity, and he has made it look almost too simple and easy. I think, however, he is to be congratulated on his technic, and I agree with most of what he said, I think, but there are a few points on which I am not in entire agreement.

The condition under discussion is probably one of the penalties we have to pay for being bipeds; at least, I have not heard of this pathological condition being found in quadrupeds. Certainly locomotion and other activities in the upright posture cause particular strains and intervertebral pressure in this lower lumbar region of the spine.

More than twenty years ago, as some of you know, I lost faith in the generally-accepted idea that sacroiliac strain or subluxation was the common cause of low back pains, especially those associated with sciatic neuralgia and neuritis. In a paper read before the Southern Medical Association about that time, I stated that those cases of so-called sciatic scoliosis described by the essayists were due to nerve-root pressure and irritation, usually the fourth or fifth lumbar roots. I stated then that sciatica or sciatic neuritis was usually not a disease, but a symptom of nerve-root irritation, most often of the fifth lumbar root. Attention was also called to the fact that the intervertebral foramen between the fifth lumbar and first sacral vertebrae was usually smaller than those above this level, but served as the exit for the largest of all the lumbar nerve roots; that frequent anomalies of the fifth lumbar vertebra often caused the fifth foramen to be very small compared to the nerve passing through it; that these foramina were bounded anteriorly by the intervertebral disc and ligaments which became thickened and prominent in arthritic conditions of this joint and that they were bounded posteriorly by the articulations between the facets, which might likewise have thickened ligaments and bony exostoses which would further diminish the size of the openings for the nerve exits. It was suggested that this root pressure explained the patient's habitual posture (flexed spine or flat back with body leaning to the opposite side) and the increased pain, often shooting down the thigh and leg when the trunk was forcibly hyperextended and bent toward the side of the painful limb. We did not know about rupture of the nucleus pulposus then as a cause of protrusion of the disc into the spinal canal or foramina, but the mechanism of the nerve-root pressure was much the same, whether the disc was ruptured and extruded or its margins and overlying ligaments thickened and infiltrated by other forms of arthritis.

Therefore, we should not be led to believe that all or most of these patients with this syndrome indicating nerve-root pressure have a ruptured disc or nucleus pulposus. A very large per cent of such cases have shown no such pathology at operation—even in many of those showing positive or suggestive X-ray findings with lipiodol injections. Thickening of the ligamentum flavum (or subflavum) is a doubtful causative factor, much less likely to cause nerve pressure than thickened interarticular (about the facets) ligaments behind the foramen and the hypertrophied intervertebral ligaments, vertebral margins, and discs which form the anterior boundary of the foramen, as is found in arthritic conditions. Such arthritis is usually chronic and may be due to wear and tear of repeated trauma or to infection. It is well known that most of these patients are past thirty-five years of age, and X-rays often show spurs or lipping of lumbar vertebrae. Also the symptoms often begin with little or no unusual trauma.

We should remember that we have always had these patients with low back pain and sciatic neuralgia or neuritis. It is not a new clinical condition, and most of them have recovered from their sciatic symptoms with conservative treatment by rest, etc. Also, we do not know if damage will result from lipiodol left in the spinal canal. I have seen it running up into the mid-dorsal region in X-rays made later on in recumbency. I wonder where it would go, and if it would do any harm if the patient stood on his head. I believe I would prefer to have an exploratory laminectomy without the lipiodol if this were the last resort after prolonged conservative treatment had failed to give relief.

DR. ROBERT BRASHEAR (Knoxville): I want to congratulate Doctor Murphey and his colleague, Doctor Semmes, on the fine work they have done in this difficult problem, and also I should like to congratulate Doctor Murphey on his photography. Certainly, if all his patients got along as well as this one did, this treatment is *the* treatment.

In accord with Doctor Billington's remarks about hypertrophic arthritis, and not in accord with Doctor Murphey's remarks, I would like to suggest that possibly there are some changes in the cartilage discs which are, as you know, common in all hypertrophic arthritis, no matter where it is, that act as a pre-existing or predisposing factor in the herniation of this nucleus. I do not know whether that is true or not, but, as the essayist and Doctor Billington have stated, this lesion is most common after the age of twenty or twenty-five, and in a joint which bears probably the brunt of all our body activities, certainly more than even the weight-bearing joints of the lower extremities.

We have made an effort to select cases for treatment, whether to treat them conservatively, that is by bed rest and traction, to be followed or not to be followed by low back brace, or whether to treat them less conservatively, but still not radically, by the removal of the disc as proposed and demonstrated by Doctor Murphey or a form of treatment which, I am sorry to say, has not been mentioned here, and toward which we, for some reason, are leaning more all the time, possibly because we do not have any neurosurgeons where I came from, but that is fusion following removal of the disc.

In the first class, just as rule of thumb, of course, varying as indicated by the symptoms, we have elected to treat all cases conservatively which are young people with one or two attacks and with normal X-ray findings of the spine, not referable to lipiodol injection at all. We set up a rule of thumb to treat all of those conservatively. In the second group, people of any age with protracted, persistent, disabling low back pain and sciatica, but with normal X-rays of the spine. Given an adequate test with conservative measures (and I think this should be emphasized regardless of other opinions), if still the persistent, disabling pain is there, then removal of the disc as completely as possible. In the third group, so far, we have listed only those—and they are usually older people—who have not only persistent, disabling low back pain with radiating sciatic pain, but also changes in the bone structure, such as pedicle defects or definite narrowing and roughening of the lumbosacral joint, or any definite reason for fusion. The ultimate answer I do not know. Those are just the ideas we have worked ourselves into so far.

I enjoyed the demonstration very much.

DR. FRANCIS MURPHEY (Closing): I wish to thank the gentlemen for their very interesting discussion.

Doctor Billington suggested that the intervertebral foramen is the point of pressure. I will show that it is not the point of pressure in most of these cases.

(Slide.) If you will examine a spine, you will find that the lumbar nerve which emerges from the canal at the foramen where the disc is ruptured emerges somewhat above the disc and is not in contact with the disc at all. Furthermore, the nerve is protected by bone above, anteriorly and posteriorly, and is about a quarter of an inch from the disc or from the edge of the vertebra. Therefore, even though there were arthritic changes at this point, it would not disturb the nerve root. The nerve which is to emerge from the spine one segment below the ruptured disc is the nerve which is compressed.

In regard to arthritis, I do not want you to think that I have made a flat statement that it cannot cause such a syndrome. I merely said that I doubt it very seriously.

We have discontinued the use of lipiodol, not because it is dangerous, but because it is unnecessary. Globus and Bucy each have examined a hundred cases that have had lipiodol in the spine anywhere from three to fifteen years, and they were unable to find any disturbance that might be attributed to lipiodol.

We have seen a few cases in which we feel that arthritis has been due to a ruptured disc. We have X-rays of these patients before they developed arthritis, the first films being taken because of their intervertebral disc pain. After a period of years (and, incidentally, before any operation was performed), the patients developed actual arthritic changes at the sites of the intervertebral disc rupture. After development of the arthritis, the ruptured discs were removed, and the patients were relieved of their pain.

Three years ago at this meeting I stated that we had been unable to arrive at a conclusion as to whether or not patients with ruptured discs should have their spines fused after the removal of the discs. We are still undecided about this procedure. I can tell you that Brown of the University of California has had considerable experience with this procedure and strongly advises against it.

I wish to thank you again for your kind attention.

LOW-BACK PAIN AND INJECTION TREATMENT*

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During the last few years, great strides have been made toward finding the causes of low-back pain. With broader knowledge, the accurate diagnosis of low-back pain has become more complicated. In adult life backache is one of the most common complaints encountered by the human mechanism. Far too many patients with backache have been treated for lumbago, sciatica, or sprains without first having a thorough examination. Some of the diseases which have symptoms of backache are the following: malignancy and metastatic diseases of the spine, tuberculosis, arthritis, curvature of the spine, sacroiliac strain or sprain, fractures, infection or other trauma of the spine; abdominal and chest disorders; pelvic disorders; static disorders; nephritis and pyelitis; sciatica, cord tumors; diseases of the cord; acute febrile conditions, and others too numerous to name. For this reason all gynecological, genitourinary, intestinal, and neurological conditions should be carefully investigated and eliminated. Because of the large number of diseases with the symptoms of backache, it becomes very difficult to determine the cause. A complete examination and careful diagnosis must be made before treatment is begun.

Because of the large number of disabilities of the lower back, consideration will be limited to lesions involving the muscles, bones, joints, tendons, ligaments, and nerves of the lumbar, sacral, and pelvic regions. A correct interpretation of the findings on routine examination is made exceedingly difficult because the physical signs produced by the actual painful lesion are disguised by signs of sprain, contracture, and rigidity of the muscles moving painful joints rather than by the joint pathology itself, or by pain radiation to areas at some distance from the seat of the actual pathology.

The patient must be stripped for the examination. He should be observed undressing and dressing to note how he is able to flex, extend, and how much lateral motion he can perform during these operations, whether he sits on one buttock more than the other, holds self straight or bends to side, and whether he favors his back while getting on the table.

He should be examined standing equally on the two feet, noting the height and prominence of each gluteal fold. He is asked to flex each knee and hip standing on the other leg (Trendelenburg technique) and observe if the buttock on this side rises perceptibly or whether it sags, which generally indicates hip joints or sacroiliac pathology.

The existence and degree of sciatic scoliosis and whether it is compensated for higher up to bring the shoulders level. Inclination of the pelvis is of interest. The legs should be measured from anterior superior spine to the internal malleoli with the patient standing squarely. If one leg is found to be shorter than the other, this may account for the tilting of the pelvis, causing the compensatory curve in the lumbar spine and not a true sciatic scoliosis. If the sciatic scoliosis patient is unable to extend the hip joint on the concave side completely, there is an inference that the hip joint or the sacroiliac joint of this side is affected. If the deviation of the spine is not changed on sitting, it is probable that the hip joint is not at fault.

When asked to stand on one foot without the aid of the other, the patient with sacroiliac soreness has difficulty in standing on the leg of the affected side. If a unilateral lumbosacral soreness is of any great severity, the patient will have pain on standing on either the affected or good leg, a point that a patient who is malingering will never make. Lumbosacral and sacroiliac pain is more severe walking down than walking upstairs ordinarily.

Forward flexion of the lumbar spine is studied to see whether the spine deviates to one side or whether there is any lag or limitation of motion at any level of the lumbar region. Flexion is more limited and painful at an earlier degree of motion in sacroiliac motion. There is a freer forward motion in the standing position with an arthritis of the upper lumbar joints, which may not be true if lumbosacral joint is affected.

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It is important to note where the motion first takes place as he begins to rise to the standing position. Soreness at any level is apt to be expressed by a lag of motion or failure until complete extension has occurred at the other levels.

On examination in the sitting position, the normal standing lordosis should be practically flattened out. Sitting kyphosis indicates weakness of lumbar muscle development, an involuntary effect to prevent torsion on a tender sacroiliac joint, or posterior prolapse of an intervertebral disc which may herniate on lordosis. In spondylolisthesis there is increased lumbar lordosis and shortening of distance between lower ribs and the ilia.

By palpation, the alignment of the spinous processes can be determined. Lumbar muscles can be palpated for fibrosis, contracture, or involuntary defense reactions and compared with prone position.

Whether sciatic scoliosis is due to spasm of concave side or muscle relaxation on opposite side can be determined by lifting the patient by his head; if the deviation disappears, it is due to relaxation of opposite lumbar muscles.

Heavy percussion on the patient's head elicits a sharp pain in an involved joint of dorsal or lumbar spine, often quite-well localized. Conversely lifting head often relieves pain.

On forward flexion, the patient stoops toward the side of spastic erector spinae muscles and very commonly away from the side of a painful or compressed fifth lumbar nerve root or posterior disc herniation.

On hyperextension of the lumbar spine, the pain of spondylolisthesis, spondylolysis, or ligamentum flavum pathology may be relieved and pain of lumbar and sacroiliac arthritis and of posterior disc prolapse aggravated.

Lateral motion in the lumbar region is confined to an area of not over forty degrees; if sciatic scoliosis exists due to joint or muscle injury, limitation of lateral motion is toward the unaffected side, and on attempting this motion the pelvis tends to rotate.

On examination in the supine position, the patient should be observed as he mounts the examining table. If he steps up briskly on the table, using the unaffected leg, he does not realize there is considerable shearing force toward the opposite sacroiliac joint, while with marked soreness he cannot step up on the good leg without some pain.

If the lumbosacral junction is involved, the patient will climb on the table in the prone position and then roll over on his back with difficulty. Painful lumbosacral pathology or spastic lumbar muscles will cause an unusual degree of lordosis. Coccygodynia will cause pain when lying flat on the table. A patient with lumbosacral or sacroiliac soreness may refuse to lie flat on table on his back, but can be more comfortably rotated toward the unaffected side with opposite knee and hip partly flexed. Insistence on lying with one hip or knee flexed is more suggestive of sacroiliac than a lumbosacral soreness.

On studying hip motion with knee flexed to a right angle, while patient is in the supine position, a complaint of painful internal or external rotation of the hip leads to suspicion of pathology in the hip joint itself.

In straight-leg-raising sign or Laseque sign, the first twenty degrees of hip flexion may elicit pathology in the hip joint; as motion continues, the pull is upon the ischial tuberosity by the hamstring muscles, a rotary strain placed on the sacroiliac joints and at about eighty degrees to ninety degrees of flexion torsion is transmitted to the lumbosacral joint. At the very beginning of leg raising the sciatic nerve trunk is stretched, giving pain down sciatic distribution. If the leg test is applied until pain begins, a sudden dorsal flexion of the ankle will greatly increase sciatic pain, but not affect lumbosacral and sacroiliac pain (Brazzid's sign).

In Gainslen's test the patient locks the lumbosacral and sacroiliac joint of one side by firmly encircling the knee of same side by his arms, then hyperextending the opposite hip over the edge of table with knee flexed, which elicits pain in the sacroiliac joint by the clockwise torsion of the joint.

Hip-joint disease in which the pain is more likely along anterior surface of the thigh can often be distinguished by Patrick's sign, in which the angle of affected side is placed on the patella of the opposite outstretched leg, and the flexed knee is pressed downward and outward.

In concluding the examination of the supine position, Baer's sacroiliac point of tenderness, described as situated two inches from the umbilicus on a line between this and the anterior superior spine, should be palpated for in each lower quadrant.

On examination in the prone position, the amount of lateral deviation is compared with standing and sitting position. Hyperextension strain can be placed on the spinal joints by raising the trunk or hyperextending the hips while the pelvis or trunk is anchored to table with the opposite hand, observing the joint at which painful symptoms begin. A tendency to spasm of the erector spinae group of muscles as compared with the tone of muscles of the opposite side can be distinguished. Sometimes a diminution of the actual bulk of the lumbar muscles of one side or a cordlike hardening or fibrosis can be made out. Spastic changes yield more readily to physiotherapy as compared with inflammatory changes. In inflammatory changes it is more difficult to distinguish a definite tender spot, while in pure muscle injury this often can be done. In examining the muscular system, wasting and fibrillary twitching of muscle groups is noted, especially of buttocks and legs. Circumference of calves should be measured for any diminution in the size of the muscle groups.

We are interested in the reflexes of the lower extremities. In sciatica ankle jerks may be diminished, but the knee jerks are not affected unless general involvement of the lumbar nerve roots or lumbar plexes. A positive Babinski, Gordon, Oppenheimer, or ankle clonus indicates central nervous system origin for any accompanying low-back pain.

Routine blood and urinalysis are part of the study of every back case. Sedimentation rates may be increased in infective processes. Eosinophilia has been reported in acute stages of lumbago or myositis in distinction from injuries of back. General lumbar muscle soreness is sometimes associated with increased uric acid in blood, although it may not be increased in very acute cases of gout. Back soreness with a positive blood Wassermann is sometimes relieved by antiluetic treatment. Lumbar puncture below lumbosacral disc in posterior herniation may give symptoms of complete or partial subarachnoid block by the Queckenstedt test. Xanthochromia may be present. Elevation of spinal fluid proteins is often present to as high as 200 milligrams of protein per 100 cubic centimeters of fluid. Twenty milligrams per 100 cubic centimeters are considered a high normal.

Now to sum up the physical findings of the most common low-back syndromes.

Sciatic scoliosis, the characteristic lateral tilt in the lumbar region without a prominent element of rotation which may be due to reflex muscular contraction; a shifting of the body weight to prevent pressing on painful lesions resulting in a deviation laterally to the sound side; a spasm of injured muscles on the same side or ligamentous strain; an asymmetrical deformity of the lumbar spine. Sciatic scoliosis is a sign of some other pathology.

Most cases with complaints of sciatic symptoms in connection with low-back pain are not actually traumatic. The patient stands with the hip of the affected side slightly flexed; has difficulty in walking upstairs; the gluteal fold is diminished; sciatic scoliosis is common, deviating toward opposite side; patient avoids sitting squarely upon the buttocks. On bending forward, body tends to deviate toward normal side if sciatica is of root or funicular origin or toward affected side if injury of nerve trunk; palpation reveals tenderness in the sciatic notch; tenderness down course of nerve; changes in sensation are typical; straight-leg-raising sign is likely to be negative if lesion is of nerve root or function.

In severe soreness about the sacroiliac joint the gait is characteristic, hip is not completely extended, and patient drags the foot, difficult to bear weight on affected side. In sitting, the weight is borne on the opposite ischial tuberosity. Lumbar kyphosis or straight back is commonly present in comparison to exaggerated lordosis in lumbosacral strain. Rotary strain can be placed on the sacroiliac joint by the straight-leg-raising test, hyperextension test, and flexion test causing pain. Baer's sacroiliac point of tenderness in the abdomen is confirmatory if present.

The lumbosacral group of symptoms may or may not be accompanied by sciatic pain. Increased lumbar lordosis, sciatic scoliosis, is common. Weight may be borne equally on both sides if no sciatic involvement. Attempt to bend forward is confined to upper lumbar segments. There is slight difference between range of painless leg raising on normal compared with affected side; percussion on head may cause exquisite localization of pain.

In lumbar arthritis and lumbago, pain is likely to begin suddenly while stooping or working in some disadvantageous position. Certain positions are avoided, especially leaning back in chair. Pain undergoes intermissions and acute exacerbations, becoming violent after some unguarded motion. Examination not only reveals joint soreness, but superimposed myositis of the muscles of back. Spasm and consistency are usually same on both sides. Percussion on head gives generalized lumbar pain. On stooping, there is no motion except at hips and in the dorsal region.

In posterior disc prolapse there are no physical, neurological, or orthopedic signs found alone. We expect to find the symptom complex of lumbosacral pathology, sciatic scoliosis deviated away from lesion, often signs of sciatica of root origin. Spinal fluid findings are as mentioned before. Cough, straining, and compression over the jugular often cause pain in lumbar region. Usually paresthesia lateral side of leg on affected side and diminished Achilles reflex in prolapse of fifth lumbar disc. Diminished knee jerk in prolapse of third lumbar disc.

In myofascitis the pain decreases by sleep and rest in bed, felt most severely on arising and decreases on movement. Fixation of muscles with stiffness and retardation of the gliding mechanism of the muscles.

The aching and distress of a painful back is one of the most disturbing ills; day or night it may be master of the patient's thoughts, interfere with all business and social activities, influence functions vitally necessary for physical and mental well-being.

If intramuscular injection is necessary, it is made directly into the painful area. Aqueous solutions last a day or two, and much longer periods follow oily injections. Sarapin, theodecaine, quinocaine, xylcaine, aciform, and the common anesthetic agents have been used. Before giving regional and local injection, preliminary sedation is given twenty to thirty minutes before treatment. The site of maximum tenderness is determined by palpation. These sites are sterilized with alcohol, iodine, merthiolate, or other antiseptic. Small intrasubcutaneous wheals are made in the marked areas with two per cent novocaine solution. A needle, twenty-two to twenty-four gauge and ten centimeters long, is inserted in muscular tissue, a distance of three to five centimeters and five to twenty cubic centimeters of aqueous solution or one to five cubic centimeters of oily solution of selected anesthetic agent is injected directly into the site of pain and tenderness. If bone is encountered, needle is withdrawn slightly and solution injected. Minimum force is used during injection, also repeated attempts to aspirate blood or fluid are made to prevent being in blood vessel or spinal subdural space. Painful nodules in muscle are injected with a few cubic centimeters of solution into center of nodule.

Pain of extensive fibrotic involvement of fascia or muscle can be relieved by injection of ten cubic centimeters of two per cent procaine followed by twenty-five to 100 cubic centimeters of normal saline. Separation of muscle bundles and fascial planes can be accomplished for forcible massage, percussion of affected area, and vibratory massage immediately after injection. Hot packs, hot baths, short wave, infrared or incandescent lamps may be used.

After injection, the muscles should be put to use, abnormal postures and positions should be avoided. Temporary use of narcotics may be necessary. Large quantities of fluid injected into the muscles and fascia tissue may facilitate the desired effect by direct separation of the components of the affected tissues, render insensitive the fine terminal of the sensory nerves, and indirectly by increased nutrition improve local elimination of toxic and deleterious substances.

In sciatica, the primary cause is determined and treated. In central sciatica, temporary relief may be obtained by an epidural injection of normal saline fifty to 100 cubic centimeters, or ten to twenty cubic centimeters of two per cent solution of novocaine into the sacrococcygeal foramen, where it comes into immediate contact with the nerve roots. Hertzler injects for pain in the sciatic nerve where it crosses the neck of the femur with one ounce of one per cent solution quinine urea hydrochloride with excellent results. The nerve can be injected through the great sciatic foramen with any anesthetic solution desired.

In paravertebral injection of lumbar nerves, the needle is inserted at a point three to three and one-half centimeters lateral to mid-line of the spine on a line with the top of the spinous process of next highest vertebra. Insertion is continued until the point of the needle comes into contact with transverse process at a depth of about three and one-half centimeters. Tip of needle is slightly elevated and insertion continued for further depth of one to one and five-tenths centimeter, making needle angle twenty to thirty degrees to surface. When pain or sensation of tingling is felt, five cubic centimeters to ten cubic centimeters of two per cent novocaine are injected.

When treatment for somatic nervous system is of no avail, attention should be directed toward the sympathetic nervous system. Many of the severe pains following injury are of sympathetic origin. These pains are hard to control, and late in disease no type of curative procedure may prove effective, so corrective measures should be instituted early. These pains are indefinite in location, variable in intensity, and patient is miserable and depressed. The sympathetic system is connected closely with the vital processes and functions of the body. Relief of the pain may be obtained by injecting the appropriate sympathetic ganglion with narcotizing agents. A twenty-two-gauge needle, eight to ten centimeters long, is inserted three centimeters lateral to the upper margin of the spinous process of the appropriate vertebra. Push perpendicular to skin four to five centimeters, when it usually encounters the transverse process. Needle is moved upward or downward until it passes the obstructing process. Needle is deflected to an angle of about twenty degrees with mid-line and inserted until lateral body of vertebrae is encountered and gradually advanced until progress is unopposed. The needle is now in the space in which the sympathetic trunks are found. If no fluid drips from needle, two cubic centimeters of two per cent novocaine are injected.

If injection is successful, there is drying of corresponding foot, anesthesia of skin of back side of buttocks, and the nerve distribution of corresponding vertebrae. Permanent paralysis may be obtained by injecting three to five cubic centimeters of ninety-five per cent alcohol.

Coccygodynia injection of ten to twenty minims of seventy to eighty per cent grain alcohol into the point of maximum tenderness, determined by pressure upon parts between the fingers inside and thumb outside the rectum, at weekly intervals for four to ten injections. There is considerable pain at time of, and for several minutes after, procedure and dull ache for twenty-four hours. If any success, expect some relief after a few injections. Epidural injection gives little or no result.

CONTACT LENSES—THE INVISIBLE EYEGLASSES*

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In the past few years the possibilities of the invisible spectacles or contact glasses have created wide interest. People are asking: Who can wear these glasses? Aren't they very irritating? How long can they be worn? Aren't they dangerous? How do they work? Most of the questions indicate a certain amount of skepticism which might be expected with any new device having such intimate human contact.

It might well be asked why there should be so much general interest just recently when contact glasses have been known for many years. The answer to this, I believe, is that they can now be molded to fit the individual eye and further that they are now made by American firms.

The contact lens as now manufactured is a thin shell of glass or plastic glass which is molded to fit the eye. The scleral portion of the lens rests on the conjunctiva, and the corneal portion is built out so that there will be no contact with the sensitive cornea. The glass when in place is invisible except to the closest inspection. The space between the cornea and the contact lens is occupied by normal saline or buffered solution. This solution, together with the lens, takes the place of the anterior surface of the cornea as the principal refracting surface of the eye. The irregular refraction of the corneal surface is replaced by that of the contact lens.

Contact glasses were originally designed as a protective covering for the eye and later for correcting the visual defect in keratoconus, but they have since been employed for many other purposes.

As a refractive device, contact glasses have been successfully employed in keratoconus, protruding degeneration of the cornea, monocular aphakia, and corneal scars which have produced an irregular astigmatism. It is in this field that they have filled an imperative need not supplied by any other means.

Many persons are finding contact glasses superior to ordinary spectacles for occupational and cosmetic reasons. Ship officers and yachtsmen wearing contact glasses are not bothered by the spray because the lids keep them wiped clean. People who appear in public, as actors and actresses, lecturers and clergymen, are using them to hide defective eyesight, while at the same time they may enjoy the security of normal vision. In some forms of sport they are proving very helpful. Several well-known myopic football players wore them last year. They are being increasingly used for purely cosmetic purposes by people who do not want to wear thick ordinary glasses.

Contact glasses have been used as a protective covering for the cornea in cases of entropion, trichiasis, exposure keratitis, and keratocele. In this field, however, it seems to me that the surgical correction of the causative defect is preferable, and for this reason I have not used contact glasses for protective purposes.

Aside from cosmetic considerations contact glasses have certain practical points of superiority over ordinary spectacles. This is particularly true in the case of high refractive errors wherein there is more or less distortion of vision toward the edge of the lens of high power. Patients with high errors putting in contact lenses for the first time are amazed at the increase in range of vision. More important than this is the effect in keratoconus and irregular astigmatism from corneal scars. In these cases the improvement in vision is truly remarkable. It is not unusual for vision to be improved from 20/200 with ordinary glasses to 20/30 or better with contact glasses. In cases wherein a cataract has been removed from one eye while the other remains normal, binocular single vision may be restored by the use of a contact glass on the operated eye.

Despite their advantages, contact glasses could be worn by relatively few persons

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before the advent of molded lenses. The round lenses were so often found to be too tight in one place and too loose in another because the eyeball was not a perfect sphere. For this reason only a few of those who needed contact glasses could wear them with comfort for a reasonable length of time. Now by molding the lens to a cast of the anterior segment of the eye a satisfactory fit can be assured in most cases. It is unfortunately true, however, that a few can never be satisfactorily fitted. Some, because of their nervous make-up, are unable to control their eyes for the making of an acceptable mold, and for the same reason others cannot tolerate the lens for a serviceable time, even though the physical fit be good.

As to the danger of breaking the lens in the eye, it would seem that so thin a piece of glass resting against the eyeball might be easily broken, but no case has yet been reported. This is readily understandable when one considers that the contact glass has the same protection from the eyelids and orbital rim as the eyeball itself. Any blow severe enough to break the glass would be sufficient to destroy the eye. Even this knowledge has not reassured some people, but with the advent of the plastic contact lens the possibility of breakage is eliminated from consideration.

HISTORICAL BACKGROUND

The original idea of covering the eyeball with a glass shell was conceived over one hundred years ago by the English astronomer, Herschell. He suggested this device to protect the cornea from a diseased eyelid. It was not until much later that attempts were made to correct errors of refraction by means of contact lenses.

A. Fick, in 1888, was the first to suggest that the visual acuity of patients with keratoconus might be improved with contact glasses. He obtained several blown lenses from the Carl Zeiss Company, with which he conducted his experiments.

In 1892 Sulzer obtained good vision with ground contact glasses in one case of high astigmatism and two cases of keratoconus. These lenses were so uncomfortable, however, that they could be worn only a short time.

Mueller, in 1909, developed a blown contact glass having a wide scleral flange. This lens resembled an ordinary artificial eye of the shell type except that the corneal portion was clear glass. The wide scleral flange of the Mueller glass gave a large surface of contact with the eyeball, and for this reason was better tolerated than any of the ground glasses. There were, however, many disadvantages to this type of lens. In the first place no correction could be ground into the corneal portion. This necessitated the laborious trial and error process of selecting from many hundreds the glass which would be comfortable and at the same time give adequate vision. A further disadvantage came from the fact that these lenses, being made from soft artificial eyeglass, became rough after a time and could not be duplicated.

Carl Zeiss overcame the two principal disadvantages of the Mueller lens when he succeeded in making a lens with a wide scleral flange from hard glass which was not eroded by the lacrimal fluid. He was also able to vary the radius of curvature of the corneal portion. This was a great step forward, as by this means the eye could be made in effect longer or shorter at will. It was still impossible to correct the high errors where the contact glass was most needed.

In 1933 Dallos, a Hungarian ophthalmologist, solved the problem of grinding high corrective powers into the corneal portion. This he accomplished by limiting the refractive portion to the eight-millimeter central area of the corneal segment. The problem of the visual fit had been solved.

There remained the problem of the physical fit before contact glasses could be used by the many. A few could wear these round contact glasses with comfort, while others tolerated much discomfort in order to gain the improvement in vision which they needed so badly.

Dallos also furnished the solution to the problem of physical fit. He noted that the eyeball was not perfectly round. Differences of as much as one millimeter in the radius of curvature of the vertical and horizontal meridians of the anterior segment of the eye were found. Thus the round contact glass fit too tightly in one meridian and too loosely in another. Comfort, then, could be obtained only by fitting the lens to the irregular sclera. To meet this difficulty Dallos made molds of the anterior segment of the eye and poured plaster of Paris into these molds to make casts of the eye. The contact glass was then molded to this cast.

In 1936 Dallos reported the successful fitting of several molded contact glasses made for him by the Zeiss Company. At this time the technical difficulties in the manufacture of these lenses were considerable. By the following year they were obtainable, but still considered experimental. Now, however, excellent molded lenses are made by several American companies.

In 1940 Obrig perfected a contact lens made entirely of plastic glass. This lens is nonshatterable, and because of this fact the popular appeal of the invisible spectacle has greatly increased.

My interest in contact glasses was whetted by Dallos' report of successful molded lenses in 1936. When materials for molding were available in this country, I began experimenting on the making of molds with the aid of the Department of Pharmacology at the University of Tennessee. It was first necessary to learn to mix and cook the molding material to the proper consistency. This molding material goes under the trade name of "Negocoll," a Swiss product, having the approximate consistency of artgum when cooled to body temperature, and at 102 degrees Fahrenheit having the consistency of cold molasses. To hold the negocoll I first used a glass shell with a handle made for me by Mr. Koch, artificial eyemaker for the American Optical Company. Later Obrig's plastic shell came out and this proved to be much more satisfactory.

The first casts were sent to the Carl Zeiss factory in Germany. The lenses were returned in about three months. The last pair sent to Germany was caught there when war was declared, and on account of the blockade they arrived here six months later, having come by way of Italy. Fortunately, there are now several American firms who make excellent glass contact lenses and the Obrig Company who make the plastic lenses.

Fitting Contact Glasses

The fitting of contact lenses is a difficult and time-consuming procedure requiring much perseverance on the part of doctor and patient.

A trial contact lens set is a necessary part of the equipment required to properly fit the lenses. This consists of ten lenses having different radii of curvature for the corneal and scleral portions. From this set is chosen the lens which most nearly approximates a scleral fit and which just clears the cornea. The fit is determined by examining the lens on the eye with the slit lamp microscope. Refraction is then done to determine the best vision obtainable with the contact lens in place.

The patient is now ready for the molding. While the eyes are being anesthetized with pontocain, water is added to a measured quantity of negocoll in a double boiler. The mixture is boiled with constant stirring until all lumps have disappeared and until the negocoll has the approximate consistency of thick molasses. It is then transferred to a beaker and cooled while stirring with a stirring thermometer. When the temperature reaches 102 degrees Fahrenheit, it is poured into the casting shell which is immediately inserted beneath the lids. The shell remains in place five minutes, while the patient holds his gaze fixed on a point on the ceiling. After five minutes the negocoll has hardened and the shell and negocoll are teased out with the aid of a plastic hook. If the patient has held his eye steady and no slips of technic have been made, a good mold of the anterior segment of the eye should result, the corneal impression being approximately in the center.

A powdered dental stone is then mixed with water in a rubber bowl and poured into the mold. When the dental stone hardens, the negocoll is removed from around it, and the cast is ready for shipping.

The cast is sent to the manufacturer with instructions as to size of lens desired and with a notation of the corneal curvature as determined from the trial lens.

The molded lens is returned in an unfinished state. The optical correction is yet to be ground and points of corneal contact or scleral pressure are to be corrected. With the aid of good focal illumination and the slit lamp microscope, any pressure point is indicated by blanching of the conjunctival vessels, and any area of corneal contact is revealed when fluorescein is used in the fluid lens. The refraction to be ground in is then determined with spheres with the contact glass in place.

The patient is then sent out to try his lenses. If he can wear them with comfort for four hours, they are returned to the manufacturer for final correction.

When the lenses are received from the company, the patient is taught how to insert and remove them. The lens is held by means of a small rubber suction bulb applied to the corneal portion. The glass is filled with normal saline or buffered solution and inserted while holding the lids apart. The removal is also accomplished with the aid of the rubber suction bulb. With practice, patients learn to insert and remove their lenses very rapidly.

CONCLUSION

Molded contact glasses as fitted by the method presented are fairly satisfactory in the majority of cases. Some can wear them all day without irritation; others can wear them for eight hours at a time, and still others can wear them for varying periods between four and eight hours. Many find that, if they remove the lenses when irritation first sets in, they can again wear them with comfort after a short interval of rest. A few can never acquire a tolerance for contact lenses.

At the present time those who are working with contact glasses feel that their possibilities are just beginning to open up. In the future more accurate and less time-consuming methods of taking an impression of the eye will be evolved. Because of the fact that the negocoll mold cannot yield a perfect impression of the nonrigid eye, a more exact method is being sought. Recently sculptures have been duplicated by photographic methods, and it may become possible to apply this technic to the eye. If successful there would no longer be any question of distortion of the mold.

Better and simpler methods of manufacture will be introduced. It is not improbable that the wholesale optical house will carry unfinished lenses in stock to be turned into the finished lens by the retail dispenser. I hope I am not looking into the too distant future for these advances.

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"THE WISH TO FALL ILL"*

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The people who do not think and talk enough about the advantages of being ill are the doctors. Their long training has been getting them ready to cure patients who want to get well as soon as possible.

People in general take a broader view. Ogden Nash gives me a text when he mentions "hypochondriacs who get nice vacations in the Adirondriacks." Ordinary conversation speaks of those who enjoy ill-health. A favorite cartoon by Briggs deals baldly with this subject.

There is a recognized difference between the Eastern and the Western worlds which bears on this subject. In the East—in India—if a man did want to go away and rest or spend years sitting in contemplation, he would be praised by society as a holy man. In our Western world, he would be called a good-for-nothing slacker. How good men among us get their rest is shown by a fine philosopher and gentleman who came to talk to me last week. Head of a college, overwhelmed by the number of his own good works, a year ago he was struck down by a coronary occlusion and spent months in a hospital and a convalescent home. He made a discovery. He was having the best time he had had for twenty-five years. He had no responsibilities, he had time to read anything he wanted, he made pleasant acquaintances which brought no cares to him, he relaxed and found his mind receptive, open, efficient. And even our society, even his own conscience, had no criticism of his restful idleness. There was the good old coronary occlusion!

We must notice the lay persons who have vivid interest in their illnesses. As one young woman said: "I was given up at six months, I commenced tonsillitis when I was a year old. At seven my tonsils and at twelve my adenoids were taken out. . . . At twenty they took out my appendix and then both tubes and a cyst off the right ovary, and I never did get over that operation." This recital and much more came not with sadness or irritation for the interruptions to a useful life, but with beaming smiles as if she described the steps in her career as an invalid.

And the rewards of illness are increasing of late. Disability insurance pays money to the person lucky enough to be ill. I know a man for whom recovery would mean not only the loss of four hundred dollars a month, but also the necessity of going back to his wife. Compensation is paid for industrial injuries. In a book by Doctor and Mrs. Timbres on Russia, where medicine is completely socialized, the word goes around among the workers that it pays to be sick—"the sicker you are, the more benefits you get." And in the United States, if a man wants to escape the draft, illness is the simplest way. "The wish to fall ill" is an important element in army morale.

All these examples have been from ordinary life. In psychiatry, illness can also serve a purpose.

An only daughter had been babied at her home in Pennsylvania, all responsibilities being assumed by her mother. When she married a minister and went to New Jersey, she found the responsibilities and complexities too great. She began to think that members of the congregation were conspiring against her. This led directly to her going to her old home, where her delusions cleared.

Let me mention different ways of looking at "the wish to fall ill," beginning with the most complicated and ending with the most simple.

I turn first to a book on psychoanalysis and medicine by Dr. Karin Stephen of England. Its subtitle is the "Wish to Fall Ill." In her Freudian presentation, she cites the case of an unmarried woman who had severe abdominal pains. Appendix and ovary had been removed without giving any relief. In analysis it became evident that the pains stood for two things—childish sexual feelings and the pangs of labor. Somewhere in the patient's hidden thinking was the idea: "No one can blame me for having these pains which make me so miserable, and so I can get a forbidden sex pleasure."

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*Read before the Southern Psychiatric Association, Nashville, October 7, 1941.

Really, the pains combined about seven wish fulfillments, which Doctor Stephens enumerates, and which are somewhat inconsistent with each other. The patient who had them really desired infantile rather than adult things. Such summary does little justice to Doctor Stephen's long account. According to her comments, the pains (and all conversion neuroses) "are as purposive as putting out an arm to ward off a blow."

In such a way of looking at the situation, the treatment is analysis. As the author says, "the attempt to undo the unconscious attitudes and unnecessary safeguards of a lifetime"—"an ambitious colossal task"—at least a year on an hour-a-day schedule. The foundations of this physically-expressed illness, according to Doctor Stephen, date from early conflict between instinctive craving and the disappointing realities of life.

A second and less complicated way of looking at the "will to fall ill" is Adler's. With his interest in the will to power, and in the competitor in life who for some reason feels inferior and cannot make good in society, he naturally believes that many neurotic people use illness as an excuse. "I cannot run in that race because I have a sprained ankle." Such people go to the doctor not to be cured, but to be confirmed in their ill-health. "They say 'No' to life with their sinuses, their hearts, their skins, or any organ which happens to be the loudspeaker of their souls."

It is not quite so simple as it sounds. The neurotic must deceive himself. Into the picture come the intricate patterns of love and hate between parents and children, between brothers and sisters. Adler stresses the idea that children, trying to get their way with much stronger adults, find that pains and other physical symptoms are their best weapons. The use of illness by men, women, and children to dominate a family is well known.

At least his idea of treatment is less complicated than Freud's. He thinks that some patients can be made to realize that sickness does not pay in the long run. Insight gained through study, through reading a book, through several interviews with physicians who have themselves suffered and found a way out may bring health, the enjoyment of facing difficult reality, the extension of mental horizons. This therapy has been described as one of secondary gains and not one of primary causes.

A third and a very different way of looking at the subject is offered by a consideration of the autonomic nervous system. In this system are to be found the converting mechanisms, over which mental happenings change into physical events: mental disgust becomes nausea and vomiting; fear becomes dryness of the throat and palpitation of the heart. In these instances the normal physiological stimulus is limited to normal response in a direct reflex.

"The wish to fall ill" must be facilitated by this direct hooking of emotional stimulus to altered function of some special organ. The reverberation of emotions through our bodies gives strong suggestions as to *where* to be ill.

But there is more to it. The autonomic system is in three parts so made up that the ends always produce effects in organs which are the opposite of effects from the middle. If a child comes to supper contented and sees before him things he likes to eat, part of the autonomic sees to it that digestive juices begin with contractions of the stomach walls. With a direct normal reflex food would be taken in and digested. But suppose he finds a big fly in his oatmeal, or suppose he spills something and dreads punishment from stern parents, then disgust or fear or both together stop the digestive juices and the stomach contractions—or start the contractions going in the opposite direction. It is easy to imagine the stomach beset by contrary impulses from contrary emotions. One part of the nervous control keeps stirring it up, and another part keeps calming it down, with the result of indigestion, gastritis. And conflict is expressed, not in terms of conscious or unconscious, not in terms of early repressions and inferiority feelings, but in terms of anatomy and physiology, in terms of conditioned reflexes.

And we begin to wonder whether we ought quickly to assume a "wish to fall ill." At lease we can see that from one point of view a person, without making any wish for a certain illness, may be caught in a trap situation and be swept by biological forces to symptoms which he does not want and does not understand.

Kempf had good words for this situation. "Repressed emotion is stored like a coiled spring in the heightened postural tension of one division of the autonomic apparatus." "Perhaps our deepest secrets lie hidden in these postural tensions."

A grand or master reflex can be described without going much beyond proved facts. Anxiety—that great factor in neurosis—can be thought of as a vague, uncomfortable body feeling: the result of tension in the autonomic field. Such discomfort constantly seeks release; it sends impulses up from the organs to the hypothalamus, which seems to be the center for all autonomic activity. If this center cannot find through its connection with the cortex a healthy release of the continuing tension, it can throw impulses downward to the organs in blind activity which produces dysfunction, disease. This is not a very useful way of meeting trouble, and yet this complicated production of disease seems to be a step toward relief of anxiety.

I saw a patient who arrived at relief through disease more directly. She was full of restless anxiety. She fell and broke her arm, and while she carried it in a sling like a baby—when she could focus on a definite bone injury—she had no anxiety.

This illustration is close to the last way of looking at the subject. It was frequent that men called to army service would consciously, deliberately, cut off the trigger finger. There is no need for involved explanation here. This is the end of a gamut: "the wish to fall ill" can be as simple as that.

"The wish to fall ill" is a kind of regression. With the hope of advancing ourselves and our civilization, we press on to higher education and greater complexities and heavier responsibilities, but we carry with us—inside ourselves—an urge in the opposite direction. Back to the simple life, to the old days, to being a boy or girl again; back to the South Seas, where you can lie at your ease and reach up to pluck your food from the tree. But there is an easier turning back, to bed, the land of counterpane, where you just have to reach up to pluck your meals from the tray brought by the nurse or the solicitous family.

A twenty-year-old boy was brought to his bed by pressure of midyear examinations, varsity athletics, and influenza. Doctors examined him frequently for lung damage which never appeared. His mother took hold, read to him, fed him by spoon warm milk every two hours, gave him pills every hour. He became weaker and weaker. Removed from these pleasant regressive influences, he was persuaded to play a set of tennis. He went promptly to his room to await his immediate disintegration. As it failed to appear, he resumed his usual strenuous life. Asked to comment on his recovery he said: "You seemed to expect it of me."

And clearly this wish is one of many. There is the related wish to stay ill, which raises problems in convalescence; there is the opposite wish to get well and to be up and doing. There are dozens of other wishes, and in most lives they meet and twist around each other in a tangle of loves and hates. The particular wish at which we have been looking is not the most important, but one advantage in its study I want to mention.

Psychiatry, which in dinner-table conversations, in newspapers, and even in medicine is often misunderstood, can well be explained by a study of "the wish to fall ill." There is the common-sense approach —Johnny is sick because he does not want to go to school. There is the approach through the basic medical sciences; the study of conditioned reflexes involving the endocrines in the autonomic system; the working out of the pathways from emotions to different organs. There is the simple clinical approach in which those physicians who are interested in their patients as persons take account of the emotional factors which enter in so much illness and convalescence; they mix a general knowledge of man's loves and hates, angers, shames and disgust with their special medical love. And then there is the psychiatric approach, which is interested in and learns from these other approaches, but which goes on to follow the most intricate and devious workings of the human mind. In the upper reaches this is research—much of it theoretical, unprovable, but useful in its suggestions.

Psychiatry, under obligation to check and record all that it finds, is shown to be understandable as well as useful as it follows the differing approaches to "the wish to fall ill" and to other wishes. It is helping the surgeon to see the deeper meanings of pain; it helps the internist to see the interplay of mind and body. To the physician it offers a very practical suggestion—take a little more time to find out about the hopes and fears of your patients.

In closing I want to say a few kind words for "the wish to fall ill." After all, it makes life more interesting and alleviates some of its distresses. It brings joy to the schoolboy, protection to the weak and oppressed, rest to the overconscientious. Used with discretion, it may deserve a place in our strange civilization.

PROTECTION OF CIVIL RIGHTS OF PERSONS IN MILITARY SERVICE

(Prepared by the Bureau of Legal Medicine and Legislation)

Designed to protect from impairment the civil rights of all members of the Army, Navy, Marine Corps, Coast Guard, and all members of the United States Public Health Service detailed by proper authority for duty with the Army or Navy, a law was approved by the President, October 17, 1940, commonly referred to as the Soldiers' and Sailors' Civil Relief Act of 1940. In substance, this law is an up-to-date revision of a similar enactment passed during the first World War, and its fundamental purpose is to free persons in the military service from harassment and injury to their civil rights during their term of military service and thus to enable them to devote their entire energy to the defense needs of the nation.

The provisions of the law, broadly stated, apply to persons on active duty with any branch of the services mentioned and to those in training or undergoing education under the supervision of the United States preliminary to induction into the military services who (1) may become defendants in a court action, (2) have dependents occupying a dwelling for which the agreed rent does not exceed $80 a month, (3) may have contracted, prior to entry into service, for the purchase of real or personal property on the installment plan, (4) may have obligations relative to mortgages on real or personal property, (5) may hold policies of life insurance of a face value not in excess of $5,000, (6) may have taxes or assessments on real property falling due, (7) may have initiated or acquired a right to lands owned or controlled by the United States, or (8) may become liable for income taxes. Generally the law provides remedies in the form of suspension of proceedings and transactions during the time a person is in the military service only when, in the opinion of the court, such person's opportunity and capacity to perform his civil obligations are impaired by reason of his being in military service.

GENERAL RELIEF

Before any judgment in default may be entered in any court, the plaintiff must file an affidavit showing either that the defendant is not in military service, that he is in such service, or that the plaintiff is unable to determine whether or not the defendant is in service, as the case may be. If the absent defendant is in military service, the court must appoint an attorney to represent him and protect his interest. This attorney, however, will have no power to waive any right of the absent defendant or bind him by his acts. Unless it appears that the defendant is not in service, the court may require, as a condition before any judgment is rendered, that the plaintiff file a bond conditioned to indemnify the defendant, if in military service, against any loss or damage that he may suffer by reason of any judgment should the judgment be thereafter set aside in whole or in part.

If judgment is entered against a person while he is in service or within thirty days thereafter, application may be made for a reopening of the case not later than ninety days after the termination of the service, at which time any meritorious or legal defense may be interposed. Vacating, setting aside, or reversing any judgment, however, will not impair any right or title acquired by any bona fide purchaser for value under such judgment.

At any stage thereof, any action or proceeding in any court in which a person in military service is involved, as either plaintiff or defendant, may be stayed by the court during the period of such service or within sixty days thereafter. Likewise the execution of any judgment or order entered against a defendant in service may be stayed and any attachment or garnishment of property, money, or debts in the hands of another may be vacated or stayed. If an action for the compliance with the terms of any contract is stayed, no fine or penalty will accrue by reason of failure to comply with the terms of such contract during the period of the stay.

Any stay of any action, proceeding, attachment, or execution ordered by the court may be ordered for the period of military service and three months thereafter and subject to such terms as may be just, whether as to payment of installments in such a manner and at such times as the court may fix or otherwise. Where the person in military service is a codefendant with others, the plaintiffs may nevertheless by leave of court proceed against the others. The period of military service, the law provides, shall not be included in the running of any statutes of limitations.

RENTS

No eviction or distress may be made during the period of military service with respect to any premises for which the agreed rent does not exceed $80 a month, occupied chiefly for dwelling purposes by the wife, children, or other dependents of the person in service, except on leave of court. The Secretary of War or the Secretary of the Navy, as the case may be, is empowered, subject to such regulations as he may prescribe, to order an allotment of the pay of a person in military service in reasonable proportion to discharge the rent of premises occupied for dwelling purposes by the wife, children, or other dependents of such person. This provision, it will be noted, applies only in connection with the rental of property used chiefly for dwelling purposes. It would seem to be inapplicable to premises used chiefly for office purposes. Legislation has been proposed to extend relief to persons in service in connection with leases executed for offices, but Congressional action on such legislation has not been completed.

INSTALLMENT CONTRACTS AND MORTGAGES

No person who prior to the date of approval of the law has received a deposit or installment of the purchase price under a contract for the purchase of real or personal property from a person who after the date of payment has entered military service may exercise any right or option under the contract to rescind or terminate it or resume possession of the property for nonpayment of any installment falling due during the period of military service, except by action in a court of competent jurisdiction. The law, however, does not prevent the modification, termination, or cancellation of any such contract or prevent the repossession or retention of property purchased or received under the contract, pursuant to a mutual agreement of the parties if such agreement is executed in writing subsequent to the making of the contract and during or after the period of military service of the person concerned. In any court action based on such contract, the court may order the repayment of prior installments or deposits as a condition of terminating the contract and resuming possession of the contract, may in its discretion order a stay of proceedings for the period of military service and three months thereafter, or may make such other disposition of the case as is equitable to conserve the interests of all parties.

The law specifically provides, however, that no court may stay a proceeding to resume possession of a motor vehicle, tractor or the accessories of either, or for an order of sale thereof, where the property is encumbered by a purchase money mortgage, conditional sales contract, or a lease or bailment with a view to purchase, unless the court finds that fifty per cent or more of the purchase price of the property has been paid. In any such proceeding the court may, before entering an order or judgment, require the plaintiff to file a bond to indemnify the defendant against any loss or damage that he may suffer by reason of the judgment should it be set aside in whole or in part.

Similar relief is afforded persons in service in connection with mortgages. The law applies only to obligations originating prior to its approval date and secured by mortgage, deed of trust, or other security in the nature of a mortgage on real or personal property owned by a person in military service at the commencement of the period of service and still so owned by him.

INSURANCE PREMIUMS

With respect to life insurance policies, the law provides that on application by a person in military service the Administrator of Veterans' Affairs may guarantee payment of premiums in order to prevent lapsing or forfeiting of policies. Such persons may, within one year after leaving military service, pay up premiums unpaid by them and resume payments of regular premiums. If they fail to do so, the policy lapses and the cash surrender value accrues to the government to the extent necessary to meet the cost of premiums which it has guaranteed. The Veterans' Administration is required to issue through suitable military and naval channels a notice for distribution to persons in military service explaining the benefits provided by the law in connection with life insurance policies and to furnish forms to be distributed to those desiring to apply for benefits.

The benefits are applicable to contracts of life insurance up to but not exceeding a total face value of $5,000, irrespective of the number of policies held by the person, when the contracts were made and the premium was paid thereon before the approval date of the law or not less than thirty days before entering service. The benefits do not apply to any policy on which premiums are due and unpaid for a period of more than one year at the time when application for benefits is made, to any policy on which there is outstanding a policy loan or other indebtedness equal to or greater than fifty per cent of the cash surrender value of the policy, to any policy which is void or which may at the option of the insured be voidable in case of military service, or to any policy which as a result of military service provides for the payment of any sum less than the face thereof or for the payment of an additional amount of premium.

TAXES ON PROPERTY AND INCOME

If a person in service, or any person in his behalf, files with the collector of taxes, or other officer whose duty it is to enforce the collection of taxes or assessments, an affidavit showing (1) that a tax or assessment has been assessed on property as described below, (2) that such tax or assessment is unpaid, and (3) that by reason of service the ability of the person to pay the tax or assessment is materially affected, no sale of the property may be made to enforce the collection of the tax or assessment, or any proceeding or action for such purpose commenced, except on leave of court granted on application made by the collector or other officer. The court is authorized to stay such a proceeding or sale for a period extending not more than six months after the termination of the period of military service of such a person.

When by law, however, such property may be sold or forfeited to enforce the collection of the tax or assessment, the person in military service has the right to redeem the property at any time not later than six months after the termination of service, but in no case later than six months after the date when the Soldiers' and Sailors' Civil Relief Act ceases to be in force. If any tax or assessment shall not be paid when due, such tax or assessment due and unpaid will bear interest until paid at the rate of six per cent per annum.

The benefits here discussed apply when any taxes or assessments, whether general or special, falling due during the period of military service in respect of real property owned and occupied for dwelling, agricultural, or business purposes by a person in military service or his dependents at the commencement of the period of military service and still so occupied by his dependents or employees are not paid. The Secretary of War and the Secretary of the Navy are required to make provision in such manner as each may deem appropriate for his respective department to insure notice to persons in military service of the benefits accorded with respect to taxes and the action made necessary to claim these benefits in each case.—*Journal of the American Medical Association.*

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H. H. SHOULDERS, M.D., Editor and Secretary

FEBRUARY, 1942

EDITORIAL

A CALL TO SERVICE

Frank H. Lahey, M.D.

President of American Medical Association

The establishment by the government of a Procurement and Assignment Agency properly places the responsibility for obtaining medical personnel in the hands of the medical profession. The success of this agency depends entirely on a few basic features: the complete cooperation of medicine in what even the most doubting must now admit is a truly national emergency; an unqualified willingness to serve the country however, wherever, and whenever required; and a firm purpose to establish the fact that medicine intends to maintain its place in the forefront as it always has when a patriotic example is of such significance.

DEBTS AND MILITARY SERVICE

The matter of debt is a subject of concern to most doctors who contemplate entering the service of the Army or Navy.

On page 68 of this issue, under the heading "Protection of Civil Rights of Persons in Military Service," will be found a statement, prepared by the Bureau of Legal Medicine and Legislation of the American Medical Association and published in the *Journal of the American Medical Association* for January 24, 1942, on this question of debts.

PROGRESS IN MEDICAL PREPAREDNESS

On another page of this issue of the JOURNAL will be found two statements from the Procurement and Assignment Service. One is a statement of policy with reference to medical students, recent graduates, internships, hospital staff members, all physicians under age forty-five, and all physicians over age forty-five.

The next statement relates to progress and is circulated in the form of a bulletin.

These are reproduced in the JOURNAL for the information of all members.

Paragraph 2 of the bulletin indicates that between 15,000 and 20,000 doctors had volunteered up to the date of issue of the bulletin.

Paragraph 5 is as follows: In general, every man under thirty-six who is physically fit should volunteer for active service in the Army or the Navy if he is now or can be made available. The most urgent need is for men under thirty-six; however, many specialists up to forty-five will be needed at once. The Procurement and Assignment Service expects that the present needs of the armed services for medical personnel will be filled by those under forty-five. Other age groups will be held in readiness to fill requisitions when their services are desired.

THE DOCTOR AND PATRIOTISM

We hold to the opinion that true patriotism is never adequately expressed except by sacrifice.

Patriotic speeches may or may not represent the conscience of the speaker. Most anyone can applaud or wave a flag, but genuine patriotism, like religion, is expressed, in the main, by sacrifice.

The present emergency calls for such an expression of patriotism on the part of doctors.

Those who have been in practice for a number of years are called upon to make a sacrifice. There are a number of obligations which deserve to be considered by a doctor. There are, of course, his family obligations. There is, then, his insurance program. He probably has an office lease. There probably is a debt on the house he lives in. He has a clientele he has been years building up. All of these deserve thought and attention and the doctor who leaves them makes a sacrifice, yes, but that is the demand of patriotism.

It is common knowledge that the people of the United States are expecting this sacrifice on the part of doctors. They are expecting it to be made on a voluntary basis, and there is no reason to doubt that it will be made on such a basis.

The writer has made some observations in the last twenty years with reference to what happened to doctors who served in World War No. 1. Most of those who came back resumed their logical places in the communities they lived in when they went away. Their families are proud of the fact that they made the sacrifice and a grateful public did not forget them.

There is no disputing the fact that a sacrifice is called for. There is no way of minimizing the sacrifice. The present job is to recognize it as a sacrifice, respect it and applaud it as it should be respected and applauded, and trust the future for the consequences.

The Functioning of the Procurement and Assignment Service

It is obvious that the Procurement and Assignment Agency is endeavoring to function in such a way as to accomplish the following ends, (1) the procurement of an adequate number of doctors to supply the needs of the Army and the Navy, (2) the preservation, in so far as is possible, of the civilian medical services, (3) the placement of doctors where their skill and services will be of the greatest use.

No one acquainted with the facts can minimize the magnitude of the task this agency is called upon to perform. The personnel of the agency, however, is such as to inspire the faith of all doctors that they will do their utmost.

Recommendations to all Physicians with Reference to the National Emergency

January 19, 1942.

Editor, Journal American Medical
Association
Editors, State Medical Journals
Secretaries, State Medical Associations

Inasmuch as this material represents one of the most important responsibilities of the medical profession at the present time, it is the opinion of the Assignment and Procurement Service that it deserves the most prominent place in your Journal it can be given. It is of equal importance to doctors themselves since it clarifies quite largely the demands which will be made upon the medical profession.

Sincerely yours,
Frank H. Lahey, M.D., *Chairman*
Harvey B. Stone, M.D.
James E. Paullin, M.D.
Harold S. Diehl, M.D.
C. Willard Camalier, D.D.S.
Sam F. Seeley, M.D.
Executive Officer.

I. Medical Students

A. All students holding letters of acceptance from the dean for admission to medical colleges and freshmen and sophomores of good academic standing in medical colleges should present letters or have letters presented for them by their deans to their local boards of the Selective Service System. This step is necessary in order to be considered for deferment in Class II-A as a medical student. If local boards classify such students in Class I-A, they should immediately notify their deans, and if necessary exercise their rights of appeal to the Board of Appeals. If, after exhausting such rights of appeal, further consideration is necessary, request for further appeal may be made to the state director and if necessary to the national director of the Selective Service System. These officers have the power to take appeals to the President.

B. Those junior and senior students who are disqualified physically for commissions are to be recommended for deferment to local boards by their deans. These students should enroll with the Procurement and Assignment Service for other assignment.

C. All junior and senior students in good standing in medical schools, who have not done so, should apply immediately for commission in the Army or the Navy. This commission is in the grade of second lieutenant, Medical Administrative Corps of the Army of the United States or ensign H. V. (P) of the United States Navy Reserve, the choice as to Army or Navy being entirely voluntary. Applications for commission in the Army should be made to the corps area surgeon of the corps area in which the applicant resides and applications for commission in the Navy should be made to the commandant of the naval district in which the applicant resides. Medical R. O. T. C. students should continue as before with a view of obtaining commissions as first lieutenants, Medical Corps, upon graduation. Students who hold commissions, while the commissions are in force, come under the jurisdiction of the Army and Navy authorities, and are not subject to induction under the Selective Service Act. The Army and Navy authorities will defer calling these officers to active duty until they have completed their medical education and at least twelve months of interneship.

II. Recent Graduates

Upon successful completion of the medical college course, every individual holding commission as a second lieutenant, Medical Administrative Corps, Army of the United States, should make immediate application to the adjutant general, United States Army, Washington, D. C., for appointment as first lieutenant, Medical Corps, Army of the United States. Every individual holding commission as ensign H. V. (P), United States Navy Reserve, should make immediate application to the commandant of his naval district for commission as lieutenant (J. G.), Medical Corps Reserve, United States Navy. If appointment is desired in the grade of lieutenant (J. G.) in the regular Medical Corps of the United States Navy, application should be made to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

III. Twelve-Month Internes

All internes should apply for a commission as first lieutenant, Medical Corps, Army of the United States, or as lieutenant (J. G.), United States Navy or Navy Reserve. Upon completion of twelve-month interneship, except in rare instances where the necessity of continuation as a member of the staff or as a resident can be defended by the institution, all who are physically fit may be required to enter military service. Those commissioned may then expect to enter military service in their professional capacity as medical officers. Those who failed to apply for commission are liable for military service under the Selective Service Acts.

IV. Hospital Staff Members

Internes with more than twelve months of interneship, assistant residents, fellows, residents, junior staff members, and staff members under the age of forty-five, fall within the provisions of the Selective Service Acts which provide that all men between the ages of twenty and forty-five are liable for military service. All such men holding Army commissions are subject to call at any time and only *temporary deferment* is possible, upon approval of the application made by the institution to the Adjutant General of the United States Army certifying that the individual is temporarily indispensable. All such men holding Naval Reserve commissions are subject to call at any time at the discretion of the Secretary of the Navy. Temporary deferments may be granted only upon approval of applications made to the Surgeon General of the Navy.

All men in this category who do not hold commissions should enroll with the Procurement and Assignment Service. The Procurement and Assignment Service under the Executive Order of the President is charged with the proper distribution of medical personnel for military, governmental, industrial, and civil agencies of the entire country. All those so enrolled whose services have not been established as essential in their present capacities will be certified as available to the Army, Navy, governmental, industrial, or civil agencies requiring their services for the duration of the war.

V. All Physicians Under Forty-Five

All male physicians in this category are liable for military service and those who do not hold commissions are subject to induction under the Selective Service Acts. In order that their service may be utilized in a professional capacity as medical officers, they should be made available for service when needed. Wherever possible, their present positions in civil life should be filled or provisions made for filling their positions, by those who are (a) over forty-five, (b) physicians under forty-five who are physically disqualified for military service, (c) women physicians, and (d) instructors and those engaged in research who do not possess an M.D. degree whose utilization would make available a physician for military service.

Every physician in this age group will be asked to enroll at an early date with the Procurement and Assignment Service. He will be certified for a position commensurate with his professional training and experience as requisitions are placed with the Procurement and Assignment Service by military, governmental, industrial or civil agencies requiring the assistance of those who must be dislocated for the duration of the national emergency.

VI. All Physicians Over Forty-Five

All physicians over forty-five will be asked to enroll with the Procurement and Assignment Service at an early date. Those who are essential in their present capacities will be retained and those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those agencies.

The maximal age for original appointment in the Army of the United States is fifty-five. The maximal age for original appointment in the Naval Reserve is fifty years of age.

All inquiries concerning the Procurement and Assignment Service should be sent to the Executive Officer, 5654 Social Security Building, 4th and Independence Avenues, SW, Washington, D. C., and not to individual members of the directing board or of committees thereof.

PROCUREMENT AND ASSIGNMENT SERVICE BULLETIN

We are sending you this bulletin in order that you may have most recent information in regard to the Procurement and Assignment Service, and the situation as it pertains to all physicians, dentists, and veterinarians:

(1) You may anticipate a rapid expansion of the armed service and a corresponding acceleration in the demands for medical, dental, and veterinarian personnel to meet these rapidly growing needs;

(2) Fifteen thousand to twenty thousand physicians, dentists, and veterinarians have offered their services to date, and their enrollment forms are now being processed—i. e., being checked against the files of the National Roster punch card system made available to this office by the American Medical, Dental, and Veterinary Medical Associations and other organizations, and further checked in the office of the Procurement and Assignment Service;

(3) Within ten days the first notifications of those men who are cleared at the Roster office and the Procurement and Assignment Service as meeting the requisitions made by the armed services will be ready for transmission;

(4) Lists of such men who have volunteered from each state are being sent to the State Procurement and Assignment Chairmen for immediate check, in order that only those available may be asked at this time to accomplish application forms for commission in the Army or the Navy. These forms will be sent to these men individually;

(5) In general, every man under thirty-six who is physically fit should volunteer for active service in the Army or the Navy, if he is now or can be made available. The most urgent need is for men under thirty-six; however, many specialists up to forty-five will be needed at once. The Procurement and Assignment Service expects that the present needs of the armed services for medical personnel will be filled by those under forty-five. Other age groups will be held in readiness to fill requisitions when their services are desired.

(6) Corps Area Chairmen will be called to Washington, to be informed of the com-

plete plans of organization and the method by which the Procurement and Assignment Service will function down to the most remote county. Following this conference, meetings will then be held by the Corps Area Chairmen with the members of the Corps Area committees and all their state chairmen for physicians, dentists, and veterinarians, respectively. Within a few weeks, every physician, dentist, and veterinarian of the nation will receive an enrollment form from the office of the Procurement and Assignment Service. On this form all will be asked to volunteer for service in military, governmental, industrial, or civil agencies requiring their services for the duration of the war. Each will be asked to designate a first, second, third, and fourth choice of the many agencies requiring assistance;

(7) A pamphlet of information is being prepared by the Committee on Information and will be ready for distribution at an early date, copies of which will be available upon request to this office;

(8) Bulletins will be issued from time to time to all committees, state society secretaries, and national and state journal editors in order that the entire profession may be kept up to date;

(9) Hundreds of letters from physicians are coming to this office asking questions in regard to the Procurement and Assignment Service. We, here, have attempted to answer these letters quickly and adequately in spite of temporary impediments incident to the establishment of a complete office. These have tended to slow us up, but now that the organization is in the process of completion we hope to be able to keep you informed;

(10) At an early date the physical standards for commissions in military and governmental agencies will be published in order that, by self-analysis, physicians, dentists, and veterinarians may determine their ability to meet the requirements for commissions.

(11) Attached is a copy of a recent release which will be of additional help.

(12) A formal acknowledgment is being made to the thousands of volunteer enrollments as rapidly as possible. We hope in the future to answer correspondence in a more formal and personal manner. Rather than to delay, however, we find it expedient to answer your communication of recent date with this form letter. Kindly accept it as a personal message intended to keep you informed. If you, or any other physician, dentist, or veterinarian in your state, have any further questions, we suggest that the majority of these will be answered in the national and state journals. If your questions are unanswered, kindly communicate with the Washington office.

Accept the thanks of the Directing Board for your interest and cooperation.

For the Directing Board:

Sam F. Seeley, M.D.,
Executive Officer, Procurement and Assignment Service.

DEATHS

Dr. James A. Price

Dr. James A. Price, Oakville; Atlanta College of Physicians and Surgeons, 1912; aged fifty-five; died January 10, 1942, after an illness of several years.

Dr. J. H. Williams

Dr. J. H. Williams, McKenzie; Memphis Hospital Medical College, 1912; aged sixty; died February 1, 1942.

Dr. Joe B. Wright

Dr. Joe B. Wright, Lynnville; Vanderbilt University, School of Medicine, 1912; aged fifty-three; died February 3, 1942.

NEWS NOTES AND COMMENTS

Change of Address

L. A. Brendle, Washington, to 543 Chautauqua Avenue, Baltimore, Maryland.

Harry E. Handley, 18 Idlewood Road, White Plains, New York, to Commonwealth Fund, 41 East Fifty-Seventh Street, New York.

E. S. Blair, Apison, to 1121 Sixth Avenue, Gadsden, Alabama.

S. T. Rucker, Memphis, to Lake Wales, Florida, care Walesbilt Hotel.

R. D. Hollowell, Memphis, to 2801 Third Avenue, North, St. Petersburg, Florida.

J. G. Waldrop, Nashville, Arkansas, to Fayetteville, Tennessee.

William N. Cook, Columbia, to Post Hospital, Fort Jackson, S. C.

SCIENTIFIC EXHIBITS FOR THE APRIL MEETING

We feel sure that some of the members of the association have exhibits which will be of interest to the profession. We will be glad to hear from any doctor who desires to have some space for an exhibit at the April meeting in Memphis. Kindly communicate with this office, 508 Doctors Building, if you desire a booth.

WOMAN'S AUXILIARY

President——Mrs. W. W. Potter
Knoxville

Press and Publicity——Mrs. Hollis E. Johnson
Nashville

Mrs. W. W. Potter, state president, presided over a called meeting of the Middle Tennessee Board at the Hermitage Hotel in Nashville on January 16, at which time she presented for discussion plans for conducting an essay contest in the high schools on the subject, "Nutrition as a National Defense." This contest is to be handled through each county auxiliary.

During Mrs. Potter's stay in Nashville, she was a guest in the home of Dr. and Mrs. B. F. Byrd on the Granny White Pike.

KNOX COUNTY

The Knox County Auxiliary members have done outstanding work during the past year. A study of their reports shows the big shipment of surgical instruments that were collected under the chairmanship of Mrs. J. S. Morrow and sent to the British War Relief; the placing of sixteen *Hygeia* subscriptions in the schools; and books and magazines given to the library in the Nurses Home of the Knoxville General Hospital. In December the auxiliary members entertained for their husbands at a beautiful Christmas party at the Farragut Hotel, afterwards taking candy and toys to the children at the Knoxville General Hospital. Mrs. Benjamin B. Cates, publicity chairman, sends in full and interesting accounts of the auxiliary meetings.

RUTHERFORD COUNTY AND STONE'S RIVER AUXILIARY

Mrs. W. W. Potter was the honor guest at the January meeting of the auxiliary in Murfreesboro. She reviewed high lights of the Southern Medical Convention, which she attended in the fall in St. Louis, and of the Executive Board meeting held in November in Chicago. Mrs. Potter was the guest of Mrs. James Scott, chairman of publicity, while in Murfreesboro. The auxiliary announced substantial contributions to the Fight Infantile Paralysis campaign and the Red Cross.

MADISON COUNTY

Mrs. G. H. Berryhill, president of the Madison County Auxiliary, reports that her group is coming along nicely and will send accounts of their meetings later.

Mrs. Potter is most anxious that reports of the meetings and activities of each county auxiliary be included in the auxiliary space in the JOURNAL, and is asking each publicity chairman to send notices of her county auxiliary meetings to the state publicity chairman before the fifth of each month.

MEDICAL SOCIETIES

Anderson-Campbell Counties:

The Anderson Campbell County Medical Society met in La Follette on February 5. Previous to the meeting dinner was served at the Russell Hotel.

Physicians from Scott and Union Counties have been invited to join the society, which was reorganized a few months ago, officers having been elected at the December meeting. La Follette was chosen as a permanent meeting place.

Dr. J. S. Hall of Clinton read a paper on "Sulfonamides."

Davidson County:

January 13—"The Late Results in Treatment in Perforated Peptic Ulcer," by Dr. Carrington Harrison. Discussion by Dr. L. W. Edwards.

"Penetrating Knife Wounds of the Abdomen," by Dr. Elkin Rippy. Discussion by Dr. M. B. Davis.

January 20—"Intestinal Obstruction," by Dr. Joe Gallagher. Discussion by Dr. James Kirtley.

January 27—"Combined Fever and Radiation Therapy in Far Advanced Malignancies—Results," by Dr. H. S. Shoulders. Discussion by Dr. C. M. Hamilton.

February 3—"Sub-Clinical Fever — Roseola Infantum," by Dr. S. L. Lowenstein. Discussion by Dr. Horton Casparis.

Report of the Plasma Bank Committee.

Greene County:

The regular meeting of the Greene County Medical Society for January was held on the sixth.

The guest speakers were Dr. John Hankins of Johnson City, who spoke on "Non-Tuberculous Diseases of the Chest," and Dr. Walter Hankins of Johnson City, who spoke on "Indications and Contraindications of X-ray Therapy."

RAE B. GIBSON, M.D., *Secretary.*

Hamilton County:

January 22—"Venous Thrombosis," by Dr. Alton Oschner, Professor of Surgery, Tulane University, School of Medicine.

February 9—"The Practitioner's Relation to Certain Surgical Problems," by Dr. W. Wayne Babcock, Temple University, Philadelphia.

February 12—"Personality Factors in Internal Medicine," by David C. Wilson, Head of Department of Neurology and Psychiatry, University of Virginia.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met on January 27. The following papers were read:

"The Management of Tuberculosis and Pregnancy," by Dr. Hollis E. Johnson, Nashville.

"Demonstration of Adhesive Strapping," by Dr. R. C. Robertson, Chattanooga.

"Management of Tumors of the Breast," by Dr. C. R. Crutchfield, Nashville.

O. H. WILLIAMS, M.D., *Secretary.*

Knox County:

January 13—"Laboratory Aids in the Diagnosis of Pregnancy," by Dr. Ralph Monger.

January 20—"Genital Prolapse," by Dr. W. C. Dixon, Nashville.

"Medical Military Preparedness," by Dr. H. H. Shoulders, Nashville.

January 27—"Trochanteric Fractures of the Femur," by Dr. Jarrell Penn.

February 3—Address by Major R. C. Tatum.

Madison County:

The Madison County Medical Society met in regular session Tuesday, February 3, 1942, at 6:30 o'clock for dinner, at the Southern Hotel in Jackson, Tennessee. Dr. Hunter Steadman, 1942 president, presided over the meeting. The following papers were read: "Ruptured Intervertebral Discs and Related Fields," by Dr. Cobb Pilcher, Neurosurgery, Vanderbilt; "Surgical Treatment of Pulmonary Tuberculosis," by Dr. Rollin Daniel, Clinical Surgery, Vanderbilt. There were thirty-two doctors present.

The officers for 1942 are: president, Dr. Hunter Steadman, Henderson; first vice-president, Dr. Hermon Hawkins, Jackson; second vice-president, Dr. W. C. Ramer, Lexington; secretary-treasurer, Dr. Stanford M. Herron, Jackson.

S. M. HERRON, M.D., *Secretary.*

Robertson County:

The Robertson County Medical Society met at the Robertson County Hospital, Tuesday evening, January 27. Those present were: Drs. R. H. Elder, J. H. Hawkins, A. R. Kempf, W. W. Porter, W. S. Rude, W. P. Stone, W. B. Dye, R. Moore, J. E. Wilkinson, and Dr. Johnson, Adairville, Ky.

Dr. Elder, president, presided. The speaker of the evening was Dr. Robert P. McCombs, postgraduate instructor. In order to give Dr. McCombs time for his lecture, the regular business session was omitted.

The society will meet in regular session February 17.

John S. Freeman, M.D., *Secretary.*

Shelby County:

The Memphis and Shelby County Medical Society met January 20.

Case reports:

"Acute Cholecystitis with Cholelithiasis," by Dr. R. K. Welch.

"Full Thickness Skin Grafts in Injured Fingers," by Dr. W. S. Anderson.

Papers:

"Some Clinical Uses of Radioactivated Elements," by Dr. Hillyer Rudisill, Jr. Discussion by Drs. Harwell Wilson and C. H. Heacock.

"Letters from a Pediatrician to His Son," by Dr. W. D. Mims. Discussion by Drs. J. J. Hobson and A. G. Jacobs.

February 3—Case reports:

"Death Due to Sulfonamides," by Dr. W. R. Blue.

1. "Cicatricial Ectropion and Traumatic Pterygium."
2. "Cataract Extraction on a Congenital Deaf Mute," by Dr. P. M. Lewis.

Papers:

"Transitional Cell Carcinoma, an Obscure Tumor of the Nasopharyngeal Wall," by Dr. J. E. Whiteleather. Discussion by Dr. J. J. Shea and Dr. Francis Murphy.

"Malpositions of the Kidney and Ureter," by Dr. I. G. Duncan. Discussion by Dr. J. L. Morgan and Dr. H. K. Turley.

A. F. Cooper, M.D., *Secretary.*

Washington, Carter, Unicoi Counties:

The regular monthly meeting of the Washington, Carter, Unicoi Counties Medical Society was held in the private dining room of the John Sevier Hotel, Johnson City, at 7:00 P.M., January 8.

The scientific program was preceded by a Dutch-type dinner. Following dinner the society was called to order by the president, Dr. E. L. Caudill. Dr. Chas. H. Cocke of Asheville, N. C., was guest of the society and gave an interesting address on the subject, "Gastrointestinal Tuberculosis."

Doctor Caudill appointed the following committees to serve for 1942:

Industrial Health—Dr. J. G. Moss, Johnson City, Chairman; Drs. W. G. Frost, Elizabethton; and H. L. Monroe, Erwin.

Cancer—Dr. Helen Wofford, Johnson City, Chairman; Drs. L. K. Gibson, Johnson City; J. B. Shoun, Elizabethton; and J. R. Moody, Erwin.

Maternal Welfare—Dr. C. W. Friberg, Johnson City, Chairman, and Dr. E. T. Pearson, Elizabethton.

Public Health and Legislation—Dr. H. B. Fuqua, Johnson City, Chairman, and Dr. W. E. Evans, Elizabethton.

Civilian Defense—Dr. H. D. Miller, Johnson City, Chairman; Drs. R. O. Ingram, Johnson City; J. H. S. Morison, Mountain Home; and H. L. Monroe, Erwin.

Thirty-one members and guests were present.

H. B. Cupp, M.D., *Secretary.*

OTHER MEDICAL SOCIETIES

The Twelfth Annual Postgraduate Assembly of the Southeastern Surgical Congress will be held at the Hotel John Marshall in Richmond, Virginia, on March 10, 11, and 12, 1942.

Because of the war the thirty-second annual Clinical Congress of the American College of Surgeons will be held in Chicago, October 19 to 23, 1942, instead of in Los Angeles as originally planned. Headquarters will be at the Stevens Hotel.

The annual meeting of the Ohio State Medical Association will be held in Columbus, Ohio, on April 28, 29, and 30, 1942.

The American Association of Industrial Physicians and Surgeons and the American Industrial Hygiene Association will hold their joint annual convention in Cincinnati from April 13 to 17, 1942.

The Second American Congress on Obstetrics and Gynecology is to be held in St. Louis on April 6-10, 1942. For information and program, write Dr. Fred L. Adair, General Chairman, 650 Rush Street, Chicago, Illinois.

Abstracts of Papers Presented at Vanderbilt Medical Society, January 9, 1942

1. Case Report: "Report of a Case of Congenital Rhabdomyomatosis of the Heart," by William R. Schaffarzick.

This extremely rare condition was found incidentally at autopsy on a ten-month-old white male infant. The myocardium was peppered with rhabdomyomatous tissue and polyps of similar nature were present on a leaflet of the mitral valve. Microscopically large, vacuolated, glycogen-containing cells characteristic of rhabdomyomatosis of the heart were seen. Also present was the frequently associated tuberose sclerosis of the brain. Neither of these conditions are thought to be neoplastic, but rather represent a developmental disturbance which may or may not undergo degeneration with subsequent scarring.

This case was discussed by Dr. E. W. Goodpasture.

2. "Radiographic Chest Findings in Sarcoid," by Dr. Herbert C. Francis.

A radiographic review of seven cases with Boeck's sarcoid was given. These cases demonstrated a wide variety of changes which occur in the chest.

This paper was discussed by Drs. Hugh Morgan and John C. Ransmeier.

3. "Detoxication of Organic Compounds in Animals in Relation to Nutrition," by Dr. J. A. Stekol.

Experimental evidence has been presented to demonstrate the view that in the course of detoxication of certain organic compounds in the animal body certain essential components of the tissues are involved. These essential tissue components are derived from the indispensable constituents of the diet. The role of the vitamins, and particularly the sulphur-containing amino acids, cystine and methionine, in detoxication of benzene, naphthalene, anthracene, pyridine, and their derivatives, including certain carcinogenic compounds in mice, rats, cats, dogs, rabbits, and man has been demonstrated by direct experimental evidence. It is believed by the author that the administration of certain drugs to animals, including man, modifies the requirement for some of the essential dietary factors either by directly involving them in the process of detoxication or by preventing their normal utilization by the animal.

This paper was discussed by Drs. C. S. Robinson, Edgar Jones, and Morton F. Mason.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

The Importance of the Sulfonamides in Anesthesia. Milton H. Adelman. Anesthesia and Analgesia, Nov.-Dec., 1941.

The anesthetist is confronted by the following physiological disturbances due to sulfonamide preparations—namely, cyanosis, decreased oxygen-carrying capacity, and oxygen content of the blood, hepatic dysfunction, synergism between narcotics and barbiturates and sulfonamide compounds.

Sulfonamide compounds produce methemoglobinemia sometimes to fifteen to forty per cent of total blood pigment. The action of narcotics and barbiturates is intensified when used in a patient saturated with a sulfonamide. These should be given in small doses to avoid confusing the anesthetist.

Hepatic dysfunction may cause alarming symptoms or even death; therefore, agents that are hepatotoxic should be used with caution. For these reasons the author prefers local, regional, or spinal anesthesia.

If inhalation anesthesia for some reason is used, he recommends ether or cyclopropane administered with large amounts of oxygen. If possible, the administration of sulfonamide preparations should be restricted for twenty-four hours before operation and methylene blue administered orally or intravenously to eliminate cyanosis by converting methemoglobin into hemoglobin.

INTERNAL MEDICINE

By R. B. Wood, M.D.
By D. R. Thomas, M.D.
Medical Arts Building, Knoxville

The Treatment of Congestive Heart Failure. Chester S. Keeper, M.D. Boston, Mass., International Clinics, Vol. IV, No. 4.

As treatment must vary with underlying causes, one must distinguish (1) right-sided failure with its peripheral edema, venous engorgement, liver enlargement, effusions, the presence of a lesion capable of producing right-sided failure with right axis deviation on electrocardiographic tracing; (2) left-sided failure, on the other hand, presents dyspnea, cough, and pulmonary edema. On physical examination is seen decreased vital capacity, rales in the lungs, pulmonary congestion on X-ray, and a cardiac lesion capable of producing left ventricular failure as hypertension, aortic valvular disease, or coronary artery disease. Electrocardiogram shows left axis deviation.

In most patients combined signs of the above are found.

Objectives of treatment are: (1) relief of symptoms; (2) to increase the efficiency of the circulation; (3) to regulate the patient's activities so that he lives in limitations; and these objectives being reached by (1) rest, (2) diet and instructions concerning a plan of living, and (3) by use of drugs for relief of symptoms.

Paroxysmal dyspnea is best treated by morphine tourniquet on all four extremities or venesection during the acute attack. Digitalis will often reduce the number of attacks if given in full doses and continuously, according to Harrison.

Cheyne-Stokes is best treated with oxygen, caffein aminophyllin, and often morphine to insure rest. Digitalis should also be given to all patients.

The vast majority of cases with congestive failure show normal rhythm. The objective guides in treatment are: (1) disappearance of symptoms, increase in vital capacity, and decrease in rales of lungs; (2) diuresis, decrease of edema, venous pressure and size of liver; (3) improvement in function of heart.

Congestive failure associated with auricular fibrillation is seen most often in four types of cases: (1) rheumatic heart disease with mitral stenosis; (2) hypertensive heart disease with or without coronary artery disease; (3) coronary artery disease; and (4) hyperthyroidism. If signs of heart failure fail to disappear following control of the ventricular rate, there are factors unfavorable to recovery. Patients with heart failure, auricular fibrillation, and a slow ventricular rate do not often respond to digitalis. The main objectives are: (1) to improve the circulation and heart action; (2) to reduce the ventricular rate and abolish the pulse deficit; and (3) to relieve symptoms.

This may be accomplished by (1) rest, (2) digitalis, (3) diuretics, and (4) removal of fluid from cavities if causing embarrassment.

Hyperthyroidism is a precipitating and aggravating factor in producing heart failure. Points stressed by Levine may be divided into three groups: (1) the general features which suggest hyperthyroidism; (2) signs in the cardiovascular system; and (3) the basal metabolic rate and the response to iodine. General features present in "masked hyperthyroidism" and heart failure are:

1. Loss of weight with normal appetite.
2. Nervousness, tremor, and excessive sweating.
3. Transient glycosuria and diarrhea.
4. Warm, moist hyperemic and pigmented skin.
5. Early graying of the hair and sensitiveness to cold.
6. Alertness and infrequent winking without exophthalmos.
7. Dyspnea and edema of legs—long before other signs of failure.
8. Slight enlargement of thyroid or adenoma of gland. Referable to the cardiovascular systems are:

1. Transient fibrillation.
2. Hyperactive heart with loud sounds, often systolic murmur.
3. Difficulty in slowing pulse with digitalis.
4. Elevation of systolic pressure with high pulse pressure.

Treatment is that of congestive failure and hyperthyroidism. If fibrillation occurs before operation, it is unwise to give quinidine as a preoperation measure, but may be given two weeks postoperatively.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

The Inhibition of Lactation During the Puerperium by Methyl Testosterone. Paul M. Lass, M.D., New York. American Journal of Obstetrics and Gynecology, January, 1942, pp. 86, 93.

A considerable number of reports have been made concerning the post-partum inhibition of lactation by the administration of hormones and similar substances. Methyl testosterone, in adequate dosage and given at the proper time, is of definite value in the post-partum inhibition of lactation. It brings about "drying up" of the breast with minimal amount of discomfort to the patient since its oral administration removes the necessity for hypodermic injection. The optimal dosage is about 250 to 300 milligrams in divided doses over a period of thirty-six hours and starting about thirty-six hours after delivery. It may also be administered after the actual onset of secretion with beneficial results. There were no associated symptoms of intolerance. None of the patients treated required purging with Epsom salts, tight breastbinders, icecaps, sedatives, or the limitation of fluids, milk, butter, or cream. All patients, even those rated "poor," agreed that they were more comfortable with this form of treatment than during their earlier pregnancies when the "old-fashioned way" of drying up the breast by use of Epsom salts, breastbinders, icecaps, and restriction of fluids was used. The puerperium was otherwise unaffected by the medication and on follow-up visit in the post-partum clinic the menstrual periods of these women were found to have returned "normally."

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Sulfanilamide and Neoprontosil (Azosulfamide) in the Treatment of Trachoma. R. D. Harley, A. E. Brown, and W. E. Herrell. Archives of Ophthalmology, December, 1941.

After reporting eleven cases, Harley, Brown, and Herrell give the following summary and conclusion:

"Eleven cases of trachoma treated by sulfanilamide or allied compounds have been reported. In each case marked objective and subjective improvement occurred. Four of the eleven patients were found to be intolerant to sulfanilamide. In three of these cases treatment with neoprontosil (azosulfamide; disodium 4-sulfamidophenyl-2'-azo-7' acetylamino-1'-hydroxynaphthalene-3'6'-disulfonate) was substituted for sulfanilamide with apparent continuation of the good results.

"Trachoma in stages two and three seems to make the best response to treatment. Trachoma probably falls into the group of diseases in which low or moderately low concentrations of sulfanilamide in the blood (three to five milligrams per 100 cubic centimeters) are sufficient to give satisfactory results when maintained for about three weeks. Neoprontosil (oral), because of its low toxicity, lends itself well to the treatment of trachoma when rather prolonged therapy is necessary. It appears to be tolerated in some cases in which an intolerance for sulfanilamide has been found. Although the results of treatment with neoprontosil are not nearly so dramatic, we feel that on prolonged treatment with this drug in trachoma the results will compare favorably with those of sulfanilamide, although sulfanilamide appears to be the preferable drug. Our results agree completely with the earlier reports on the use of sulfanilamide in the treatment of trachoma."

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Sarcoid Disease as Revealed in the Chest Roentgenogram. D. S. King. American Journal of Roentgenological and Radiological Therapy, Vol. 45, No. 4, p. 505, April, 1941.

The sarcoidosis is a disseminated disease, which involves particularly the skin, lymph nodes, lungs, eyes, bones, and spleen. Histologically, the lesions are similar to tuberculosis even to the presence of giant cells, but there is no caseation.

In chest involvement there may be: (1) involvement of the hilum glands and radiate out into the lung fields, which resembles hilum tuberculosis. Other cases resemble (2) silicosis, (3) caseous tuberculosis, (4) fibrous tuberculosis, (5) metastatic carcinoma, (6) miliary tuberculosis. The author doubts whether or not sarcoid lesions heal by fibrosis, and he believes other factors may play a part when fibrosis seems to occur.

It is pointed out that usually extensive pulmonary involvement with sarcoidosis produces little or no symptoms. They also caution against excluding sarcoidosis when fungi are found. A case is reported which repeatedly showed aspergillus in which the diagnosis of sarcoidosis was ultimately proven.

In summary sarcoidosis is a disseminated and protein disease involving in varying degrees the skin, lymph nodes, eyes, bones, lungs, and many other tissues. In our experience the lesions in the mediastinal nodes and lungs tend to clear without demonstrable fibrosis, the average time for clearing being twenty-two months, but there are exceptions. Bone lesions were present in a little over ten per cent of our series. Erythema nodosum gives a chest roentgenogram indistinguishable from that of sarcoid disease, and in two of our cases a possible mycotic infection complicated the picture.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II, M.D.
188 South Bellvue, Memphis

Appendicular Obstruction: Its Clinical and Pathological Aspects. John J. McCalleg, M.D. Surgery, Gynecology, and Obstetrics, 73: 539 (October), 1941.

This paper supports the contention that acute appendicular obstruction is a distinct pathological entity differing from acute appendicitis that is nonobstructive. Impacted fecaliths comprise the largest percentage of etiological agents, although fibrous strictures, foreign bodies, lymphoid hyperplasia, and carcinoid tumors may be the cause. Extraluminal factors include adhesions, kinks, peritoneal bands, etc. The pathological picture is that of dilatation of the lumen and thinning of the walls and the liquid contents are under pressure. Passive congestion, acute inflammation, and necrosis are present only in the later stages, when the increased intraluminal pressure produces compression changes in the wall of the appendix. In the later stages of the obstructive picture it is complicated by infection with its resultant changes. In the nonobstructive type there is no dilatation of the lumen or thinning of the walls.

Clinically the most characteristic symptom of the obstructive type of appendicitis is a colicky pain which comes on suddenly and is intermittent. "Systemic signs of fever, rapid pulse, and leucocytosis may be absent in acute appendicular obstruction, even when the pathological picture appears dangerously acute." These signs, however, are usually present in the later stages. Vomiting is not a characteristic symptom with the obstructive type. The dangers of appendicular obstruction are not evident on pathological examination if the organ has been removed before inflammation has begun.

Observations drawn from this series of seventy cases of clinically acute appendicitis, in which obstruction was present, led the author to certain definite conclusions. The usual pathologic diagnosis of an acute appendix merely shows the microscopic picture of the organ at the time of surgical removal. In cases of early appendicular obstruction the pathologist may find only minor changes, but this does not mean that removal of the appendix was not a vital necessity, for in a few more hours gangrene may have developed. This illustrates how much more rapidly the obstructive type progresses than the simple inflammatory type. Hence, time is a much more important factor in the obstructive variety since some cases show necrosis as early as six hours from the onset. Where the history is suggestive of acute appendicular obstruction, surgical intervention is urgent. In this type when fever and leucocytosis are present there is danger of early gangrene and perforation.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

Treatment and Cure of Seventy-Six Cases of Hydrocele by One Twin Injection of Lithium Salicylate and Quinine Hydrochloride and Urethane. J. C. Diamond. American Journal of Surgery, January, 1942.

This author reports seventy-six selected cases of hydrocele treated by injections with lithium salicylate and quinine hydrochloride and urethane with successful results. In selecting the cases: (1) there had to be no previous tapping or other treatment; (2) there should be no complications such as hernia, varicocele, etc.; (3) diagnosis of hydrocele should be correct.

The patients received the injections in the office and were allowed to walk out. The most time lost by any patient was three days, every patient was cured without any complication, and the longest period of observation has been seven years.

Two patients died four and five years, respectively, after injection with myocardial failure. A postmortem and pathological examination of the scrotum demonstrated complete adhesion and obliteration of the hydrocele sac.

Under aseptic technic the scrotum is prepared. One cubic centimeter of one per cent novocaine solution is injected subcutaneously in the selected area. Then a number sixteen gauge spinal needle is inserted into the sac, the fluid withdrawn, completely emptying the sac. The lithium salicylate solution, four to six cubic centimeters, is then injected through the needle, one cubic centimeter of sterile water is then injected, followed by the injection of four to six cubic centimeters of the quinine hydrochloride and urethane. A thick, sticky substance is formed when these two compounds come in contact. The scrotum is gently kneaded before removing the needle.

After the injection a suspensory is put on and the patient is allowed to go home, where he remains in bed twenty-four to forty-eight hours. The swelling and soreness which occurs reaches its maximum in twenty-four hours and then begins to subside.

In carefully-selected cases, this treatment can replace surgery and save the patient time and expense.

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Committee on foods

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DISABILITY INSURANCE AND HOSPITALIZATION PAYMENTS

The following editorial, because it deals with a matter of importance relating to possible current legislation, has been especially authorized and approved by the Board of Trustees of the American Medical Association.

In his budget message to the second session of the Seventy-Seventh Congress, January 7, President Roosevelt recommended "an increase in the coverage of old-age and survivors' insurance, addition of permanent and temporary disability payments, and hospitalization payments beyond the present benefit programs, and liberalization and expansion of unemployment compensation in a uniform national system." On January 20, 1942, a communication from the President was sent to the House of Representatives requesting $300,000,000 for "extended unemployment compensation benefits." This recommendation apparently is not related to the proposed disability and hospitalization payments, but refers only to problems of unemployment occasioned by the changing of industrial plants from the production of peacetime goods to the production of war materials. Officially, this is the status of a recommendation thrown by the President recently into the whirlpool of public opinion. The discussion of the problem is agitating leaders in the fields of prepayment plans for medical care and hospitalization, hospital management and medical practice.

Various conferences in Washington with representatives of the Social Security Board yield the impression that the proposal of the President involves primarily a plan to increase taxation under the Social Security Act by one per cent, of which five-tenths per cent is to be paid by the worker and five-tenths per cent by the employer, with a view to providing every insured worker or his dependents during periods of hospitalization with the sum of three dollars a day. The plan would involve also allowances in cash to cover disability equal to the present allowances for unemployment during periods of sickness. This proposal apparently had its origin in the report of the Technical Committee on Medical Care, which introduced the so-called National Health Program in the National Health Conference in Washington in 1938. At that time the House of Delegates of the American Medical Association held a special session to give consideration to the national health program. The Reference Committee on Consideration of the National Health Program in a report adopted by the House of Delegates said:

> Your committee approves the principle of hospital service insurance which is being widely adopted throughout the country. It is susceptible of great expansion along sound lines, and your committee particularly recommends it as a community project. Experience in the operation of hospital service insurance or group hospitalization plans has demonstrated that these plans should confine themselves to provision of hospital facilities and should not include any type of medical care.

The committee also said:

> In addition to insurance for hospitalization your committee believes it is practicable to develop cash indemnity insurance plans to cover, in whole or

> in part, the costs of emergency or prolonged illness. Agencies set up to provide such insurance should comply with state statutes and regulations to insure their soundness and financial responsibility and have the approval of the county and state medical societies under which they operate.
>
> Your committee is not willing to foster any system of compulsory health insurance. . . .

Considering particularly the question of insurance against loss of wages during sickness, the report of the committee said:

> In essence, the recommendation deals with compensation of loss of wages during sickness. Your committee unreservedly endorses this principle, as it has distinct influence toward recovery and tends to reduce permanent disability. It is, however, in the interest of good medical care that the attending physician be relieved of the duty of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency.

Following the meeting of the House of Delegates in 1938 came the recommendations of the Interdepartmental Committee to Coordinate Health and Welfare Activities. This group recommended the development of social insurance to insure partial replacement of wages during temporary or permanent disability. Senator Robert Wagner of New York, in the well-known proposed National Health Act, S. 1620, and in subsequent proposed legislation, also endeavored to include plans for disability compensation and indeed to provide medical service in addition to compensation.

In numerous addresses and in hearings before legislative bodies since 1938, Mr. Arthur J. Altmeyer, chairman of the Social Security Board, has continued frequently to suggest cash benefits to persons unemployed because of sickness and the provision of constructive social services to supplement cash aids, including medical care. Obviously every proposal for expansion of the social security program must, therefore, be viewed in the light of the ultimate goal set by Mr. Altmeyer. Even though the House of Delegates of the American Medical Association apparently approved unreservedly the principle of cash benefits for those sustaining loss of wages because of sickness, the provision of cash payments of three dollars a day to the worker who is hospitalized must be considered as part of a movement toward complete plans for compulsory sickness insurance on either a cash or a medical service basis. As evidence of the apparent inseparability between disability benefits and medical and hospital care, workmen's compensation acts, under which an injured worker is supplied with cash benefits for disability and also with necessary medical and hospital care, are cited.

The new proposals of the President, apparently emanating from the Social Security Board, must not be viewed in the light of circumstances as they prevailed in 1938, but in the light of conditions as they exist today. The intervening period has witnessed an extraordinary expansion in voluntary hospitalization insurance and in so-called medical service plans. Today some fifteen million persons are insured against the costs of hospitalization in a variety of agencies, including private insurance corporations, mutual nonprofit plans like the Associated Hospital Service of New York, and hospitalization plans set up on a nonprofit basis in various states. At least fourteen states and numerous counties have developed voluntary plans to cover the costs of medical care. An extensive experimentation is now in progress which should lead ultimately, if not too greatly disturbed, to the development of procedures distinctly American in their characteristics and wholly capable of meeting the needs for medical and hospital service. These are likely to be adapted to the American system of government rather than modeled after those plans of medical care and hospitalization which have prevailed in foreign countries, and which have been developed under concepts that are socialistic, communistic, or totalitarian rather than democratic.

The Annual Report of the Social Security Board for 1940 indicates that that agency contemplates nothing short of a complete system of compulsory sickness insurance. Thus the report states:

> Studies of illness and disability as a cause of economic insecurity were continued during the year, and consideration was given to proposals for extending the social security system to include the risk of ill-health and disability.

Moreover, there are indications that the Social Security Board has been much concerned with the question

> whether the development of a program of medical care in connection with the three assistance pro-

grams under the Social Security Act would assist or hamper the development of a broader program of medical care for those groups in our population who are not now able to obtain needed services.

In fact, Mr. Arthur J. Altmeyer stated his point of view positively to the Congress when he said in July, 1941:

> Our eventual goal should be the establishment of a well-rounded system of social insurance to provide at least a minimum security to individuals and their families due to unemployment, sickness, disability, old age, and death. In addition, we must provide a series of constructive social services to supplement the cash aids provided under social insurance. Medical care should be available to individuals and their families so that we may build a healthier, happier nation. Such a system of medical care would be instrumental in reducing the costs of cash payments for sickness and disability.

From these statements it is clear that the goal of the Social Security Board is definitely a nation-wide system of compulsory sickness insurance. Obviously, then, every proposal for expansion of social security must be considered in its relation to that goal.

Specifically, nevertheless, the present proposal is for the payment of three dollars for each day the worker is hospitalized. This blunt statement without qualification must, of course, be translated into proposed legislation before all its implications can be fathomed. The proponents of voluntary hospitalization and medical service plans have felt that the enactment of such legislation would sound the death knell of their voluntary proposals. Even they, however, are not of one mind in their approach to the problem. Indeed, some have indicated that they might not look askance on the proposal if the technic concerned would involve payment of the cash benefit directly to such plans rather than directly to the insured patient. This would mean recognition by the government of the prepayment plans as the official agency in the field of hospitalization and medical care. Representatives of medical and hospital service plans definitely propose that the Federal Security Administrator issue a complete endorsement of such existing prepayment plans and that he urge all communities to form similar organizations. Such a pronouncement would be premature. Most of these plans are still largely experimental; they cover, for the majority of the insured, only hospitalization and surgical fees. Few of these plans have yet secured much more than a slight majority approval of either the medical profession or the public which they would serve. Many questions as to the cost of promotion and maintenance and the character of the control of voluntary hospitalization and medical care plans remain unanswered. These were no doubt some of the considerations which caused the House of Delegates of the American Medical Association, at its 1941 session, to request the Bureau of Medical Economics to make a comparative study of medical service plans for submission to the House of Delegates in 1942. Until voluntary efforts have shown themselves incapable of meeting existing needs, they should be encouraged rather than discouraged or even destroyed by forms of government competition or intervention. By contrast government plans are costly to administer and inefficient in operation; they are even more experimental than the voluntary plans, and they function on such a huge scale as to make relief from them wellnigh impossible once they are established.

Consideration of the proposed three dollars per diem payment for hospitalization costs for workers and their dependents must depend, therefore, first on the merits of the proposal itself and second on its relation to the proposed goal of a complete compulsory sickness insurance plan. Among the important objections to the three dollars per diem payment plan is the fact that the contribution would cover only a portion of the cost of necessary hospital care as defined in most of the voluntary hospitalization plans. The establishment by the government of a fixed price per day for hospital services would inevitably tend here, as always in the past, to cause deterioration of such service to meet the fixed price. Workers would feel, no doubt, that the payment of a three dollars fee was the government's evaluation of what proper hospital service should cost. While the fee might be nearly adequate in rural areas, it would, of course, be wholly inadequate in urban centers.

The voluntary hospitals of the United States now provide an essential service to the American people. These hospitals have grown as a community interest; many of them are founded in that tenet of most religions which states that the care of the sick is one of the highest moral functions that mankind can fulfill. Federal payment and control of hospitalization costs would destroy local, religious, and private community interest in the maintenance of voluntary hospitals, thus jeopardizing their future and inhibiting the initiative to assist them. The proposal involves, as one may observe from the statements of representatives of the Social Security Board, increased federal funds for new hospital construction. Already such appropriations as the government has made have tended to freeze the flow of bequests and donations for nonprofit hospitals. With these concepts in mind, representatives of various organizations in the field of the hospital are emphasizing in this critical time that the voluntary hospitals are a national asset of incalculable value, that their efficiency is traceable in large part to their freedom of action under local control and that proposed legislation should have most careful consideration from the professional and hospital point of view before it is offered to the Congress.

The American people find themselves today in the midst of a war which, this time, is in all truth a war for the salvation of democracy. Unless that war is won, such "social gains" as may have been secured will disappear along with the fundamental freedoms which prevail only under a democratic system of government. Those fundamental freedoms are more vital to the nation than any expansion of public services, or the engraftment on the body politic of new systems of payment for work, or improvement in the manner of living, or security developed by enforced savings through compulsory insurance. The American people are not averse to immense sacrifice—even to the ultimate sacrifice—if it will win the war. They should not be compelled, in the midst of such sacrifice, to consider radical proposals for changing the whole system of American living in health or in illness. The proposed expansions of the Social Security Act related to medical care should be considered in times when they can be given that type of deliberate, meticulous consideration which carefully weighs every aspect of the problem concerned. Such proposals should not be submitted to the Congress and to the people in a period fraught with anxiety as to whether or not the nation itself will survive. Let us at least postpone these proposals until the decision as to whether or not our democracy can successfully defend itself against ruthless totalitarianism is clear.—*Journal of American Medical Association.*

THE PRECANCEROUS DERMATOSES*

HOWARD KING, M.D.; C. M. HAMILTON, M.D.; ROBERT BUCHANAN, M.D., Nashville

The term precancerous is attached to a group of skin manifestations which will result in malignant degeneration in approximately one-fifth of the cases.[1, 2, 3, 4] The precancerous dermatoses shall include phimosis, senile keratoses, cornu cutaneum, arsenical keratoses, and other lesions caused by carcinogenic substances, Paget's disease, Bowen's disease, erythroplasia of Queyrat, leukoplakia, the precancerous melanoses, and syphilis. Syphilis is considered because so many authorities think that syphilitic glossitis and lingual gumas often precede malignancy of the tongue. The point to emphasize in regard to syphilis is not to overlook a cancerous or precancerous lesion simply because the patient has a positive Wassermann. All suspicious lesions should be examined histologically. Such lesions as lupus vulgaris, lupus erythematosus, psoriasis, etc., are excluded. Epitheliomata developing as an aftermath of these diseases has no higher incidence than chance alone would account for taking into consideration the age of the patient, the carcinogenic factors of X-radiation and arsenic which they may have received.[1] Seborrheic keratoses are greasy, dirty, brownish to black warty growths of various size, elevated above the surrounding surface, occurring most often on the back, breast, or face in people over forty. They are not included in this group because of the infrequency of malignant degeneration, but are mentioned for the purpose of differentiation. The term precancerous dermatoses is one based on clinical, statistical, and histopathologic concepts. In about twenty per cent of such cases epitheliomata develop and are usually of the squamous cell type. They begin in situ, and are associated with various phenomena of dyskeratosis and keratinization of individual cells simulating most closely the histologic picture of Bowen's disease.[1]

There may be some controversy over the inclusion of Bowen's disease and Paget's disease in this group because many authorities regard these lesions as being already malignant; that is, the lesions begin as true cancer cells and are therefore never precancerous. But in the present discussion they shall be included because so many cases are on record of these lesions becoming definitely malignant only after years of existence.[1] The inclusion of phimosis as a precancerous dermatosis is perhaps not perfectly legitimate because when phimosis acts as a precursor of cancer it acts only as a chronic irritating factor so that perhaps the resulting cancer of the penis goes through the following steps—phimosis, leukoplakia, erythroplasia of Queyrat, carcinoma. Changes underneath the covering of the nonretractable foreskin are never seen until the man has a well-developed carcinoma which may already have progressed so far as to be incurable or else curable only by drastic procedures as amputation of the penis and dissection of groins or by destruction from radiation. Be that as it may, the phimosis has been a contributing factor. We never have seen a carcinoma of the penis without a preceding phimosis, and other men with whom we have talked say that they cannot be sure of the absolute accuracy of that statement, yet they are definitely of the opinion that at least most of the cases of carcinoma of the penis were preceded by a phimosis. So then it seems justifiable to include phimosis as a precancerous condition if not exactly a dermatosis.

Senile keratoses[2, 3] are rough, elevated hyperkeratotic patches with ill-defined limits usually numerous and widely distributed over the face, forehead, hands, etc. They usually occur in patients of middle age and older in whom the skin is thin and atrophic. Such a lesion may exist for years before undergoing malignant degeneration.

The surface of the early lesions is wavy and irregular and often marked with deep indentations. There is a marked increase in the horny layer, which penetrates deeply all the invaginations of the surface. Large patches of parakeratoses are present in the horny layer and the malpighian layer is infiltrated by numerous inflammatory cells of the round-cell type. The rete cones are irregularly formed, and in those cases which are to become malignant the rete cones send narrow conical-shaped processes deep into the corium, and it is from these that the malignant tumors develop.[5]

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*Read before the Nashville Academy of Medicine and Davidson County Medical Society, Nashville, February 24, 1942.

Senile keratoses are most often confused with seborrheic keratoses and arsenical keratoses.

All senile keratoses should be destroyed which can easily be accomplished by X-ray or electrocoagulation. We would like to warn against treating lesions of this type by the so-called "touching up" method of treatment, in which irritating applications of chemical caustics, either liquid or in an ointment, or paste form are used. These not only fail to destroy the lesion, but, on the other hand, act as an irritant and thereby stimulate malignant degeneration.

Cornu cutaneum is a sharply circumscribed cutaneous horny formation projecting above the surface of the skin and varying considerably in size and shape. The base of the lesion resembles a wart. The lesions look much more ferocious than they actually are. Histologically, there is a great similarity to a wart with a number of greatly elongated papillae surrounded by a considerable growth of the rete as a basis for the production of an excessive hyperkeratosis. Although there may be some irregular growth in the rete pegs, the lowest limits of the epithelium are everywhere clearly denoted by a regularly formed basal row of cells. The hypertrophy of the horny layer is out of all proportion to that of the other layers, and this disproportion is the one constant finding in these horny growths.[5] Projections of this sort naturally are frequently the recipient of trauma, so that irritation and resulting inflammatory reaction is present in the corium.

These lesions are permanently destroyed by electrocoagulation, but any method less drastic is usually ineffective, while more radical treatment is unnecessary.

Arsenical keratoses[6, 7] present themselves after the long-continued use of arsenic. Previous to 1933 there were sixty cases of carcinoma following arsenical keratoses reported in the literature, but many are unreported.[6] The lesions are due to epithelial hyperplasia around the sweat pores, symmetrically distributed usually on the palms and soles, but may be located anywhere. The histological picture is undistinguishable from that of senile keratoses. Frequently treatment of all the lesions is almost impossible and is unwise, but the larger excrescences should be destroyed by electrodesiccation.

Paget's disease[5] is found most commonly on the nipple and breast in women over forty. Occasionally other areas as scrotum, penis, anal region, back, neck, or nose may be the site of these eczema-like patches of weeping, fissured, eroded, and crusting dermatitis. They may be single or multiple. At times they occur as circinate, serpiginous, and centrally scarred atrophic areas. The nipple may become more and more retracted until it disappears. The involved area always has a well-defined limit and shows varying degrees of infiltration. If allowed to run in all cases, there is finally developed a carcinoma which forms metastases. Many authorities regard Paget's disease of the nipple as always beginning as a carcinoma in the ducts of the breast which later makes its appearance on the surface. Others think it is malignant from the beginning no matter where it first appears.

Histologically, it, like Bowen's disease, is an intraepithelial carcinoma. The epithelium is thickened and peculiar degenerative changes in the individual cells of the squamous celled layer are present. An inflammatory infiltrate of lymphocytes and plasma cells in the lower portions of the epithelium as well as in the corium is observed. The rete cones become longer and broader, and these changes are more prominently observed as one follows the lesion from the periphery toward the center. In these abnormal rete cones there are numerous atypical mitotic figures and cells that are enlarged, swollen, and edematous which have lost their spinous processes. These cells are clearer than normal and have large, round, or lobulated deeply-staining nuclei. They may be single or in small groups. The protoplasm shows marked vacuolar degeneration. The cells do not develop normally into cornified cells, but are distorted and compressed, and the limiting membrane ruptures and the nuclei are cast off as small, round, or crescent-shaped homogenous ringlike bodies, and it is these characteristic bodies which are Paget's cells, and are specific in these lesions. Paget's cells may be found in the follicular epithelium and in that of the sebaceous and sweat glands. They may also be found in the blood and lymph spaces which leaves no doubt as to the malignancy of this affection.[5]

In the differential diagnosis consider:

(1) Weeping eczema which shows few if any degenerative changes and no Paget's cells. Neither is there so likely to be the increased abnormality of the rete cones from periphery to center of the lesion.

(2) So-called pagetoid epithelioma histologically is typical basal cell epithelioma, the only resemblance being clinical in that the lesion is raw, oozing, and fissured.

(3) Bowen's disease. (To be discussed next.)

The treatment of Paget's lesions is only one—eradication—amputation of the breast, and in other areas destruction by either excision or by X-ray. Treatment should include an ample surrounding zone.

Bowen's disease[8] is an affection of longstanding single or multiple papulo squamous eroded or crusty hyperkeratotic plaques very much like a tertiary cutaneous syphilide. Lesions may occur anywhere on the body, and at times they may show peripheral extension with a serpiginous border and a tendency to heal in the center with scar formation. As a rule, these lesions do not form metastases, but at times they do invade the lymph spaces and glands and produce metastases in the inner organs.[1]

Like Paget's disease, it may be considered an intraepithelial epithelioma. Regardless of whether these lesions appear as erythematous spots, papules, crusted hyperkeratotic vegetations, or an involvement of lymph glands, the histological picture is always the same. The surrounding epithelium is thinned out up to the point of the dyskeratosis. In the involved area the rete cones and the remainder of the epithelium are hypertrophied. The cones are enlarged, being broader and thicker than normal, and grow deeper into the corium, but they are always sharply demarkated from the corium. In the outer horny layer of the thickened rete cones the characteristic cells are found. These cells assume many different forms, some are clumped and seem to merge as if an epithelial pearl is beginning. There is an irregularity in arrangement, the cells are larger than normal, and numerous mitotic figures, many of which are atypical, are present. In addition there are numerous fairly round bodies which seem to be surrounded by membrane. These bodies are known as corps ronds and are present only in Bowen's disease, Paget's disease, and keratosis follicularis, which is another of the dyskeratotic dermatoses. In the underlying corium there are signs of inflammation, the cells being lymphocytes and plasma cells.[5]

Differential diagnosis lies between psoriasis, lupus erythematosus, neurodermatitis, tertiary syphilis, basal cell epitheliomata, and Paget's disease. All of these can be readily ruled out by histological examination except Paget's disease, and there the differential may be as difficult histologically as it is clinically, if indeed they are different diseases in any way except location. The striking similarity between Paget's disease, when it isn't on the nipple, and Bowen's disease, both clinically and histologically, makes us very loath to regard them as separate affections. Whether they are the same or different diseases is of no practical importance from the standpoint of therapy because in both the lesions should be destroyed. Perhaps a destructive dose of X-ray is the method of choice.

Erythroplasia of Queyrat[9] is a rare precancerous lesion usually seen on the glans penis, but at other times encountered on the female genitals, and rarely on the lips and buccal mucosa.[10] The lesions are slowly developing, circumscribed, erythematous, usually moist, velvety, shiny patches which if left alone develop into a squamous cell epithelioma. Histologically, the chief changes are acanthosis with fingerlike down growths. The epidermal cells are swollen by intracellular edema. There is a tendency to form whirls, and in the underlying corium fairly marked inflammatory reaction is present, made up mainly of round and plasma cells, but a few polymorphonuclears are often present.

Differential diagnosis lies between psoriasis, lichen planus, and leukoplakia. The presence of psoriasis or lichen planus elsewhere on the body and microscopic examination should serve in making an accurate diagnosis.

Treatment of erythroplasia is excision when possible. If excision is impossible, the lesion should be destroyed by either coagulation or X-ray. Methods of treatment less drastic are noncurative.

Leukoplakial patches are ill-defined grayish white plaques or specks that gradually merge into the normal surrounding mucous membrane. They occur most often in the mouths of men, less frequently in the mouths of women, and on the inner surfaces of the labia majora and minora, and least frequently on the glans penis and undersurfaces of the prepuce. Some lesions may become quite large through the confluence of several smaller ones. Occasionally the overgrowth of the epithelium is rapid and extensive, and true warty growths (leukoplakia verrucosa) develop. Such growths develop rapidly into squamous-celled carcinoma.[1, 4, 5]

Histologically, there is a more or less chronic inflammatory reaction in the papillary and subpapillary regions of the corium combined with a marked proliferation and thickening of all the layers of the epidermis.[5]

Differential diagnosis between lichen planus and leukoplakia may be hard clinically, but the presence of lichen planus elsewhere or a microscopic section should settle the issue.

Patches of leukoplakia should be destroyed by either X-ray or electrocoagulation. Treatments by caustics or solid carbon dioxide frequently are ineffective, are apt to stimulate additional growth, and are to be condemned.

The melanomas belong to the group of embryonic cancers which arise from pigmented or nonpigmented moles. The moles, which are the source of melanomas, arise on any portion of the integument, and are more likely to malignant change when their positions are subject to chronic irritation. The melanocarcinomata are highly malignant, even more so than melanosarcomas, and are very resistant to radiation. The signs of transition from a benign pigmented mole to a malignant melanoma are: (1) increase in size; (2) increased depth of color; (3) formation of crusts; (4) bleeding; (5) ulceration; and (6) adenopathy.[11] However, by the time these changes are observed, it is often impossible to cure the patient of this highly malignant neoplasm. Fortunately, moles only rarely undergo these changes, and then usually after incomplete removal or after trauma. So then any treatment of the majority of moles is unnecessary, but those which are subject to irritation should be thoroughly removed.

In summary there are three points to emphasize:

(1) We have considered a group of lesions which if left alone will result in malignant degeneration in twenty per cent of the cases.

(2) Accurate diagnosis can be made by histopathologic examination.

(3) Early diagnosis and proper treatment will prevent the occurrence of many cutaneous malignancies.

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We must put our dollars into the front-line battle of America's fight for freedom. We will strike—and strike hard—in this forward march of dollars to win victory.

FUNCTIONAL UTERINE BLEEDING*

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Abnormal uterine bleeding is one of the most frequent causes for which a patient consults the gynecologist. The cause may be organic (as in certain constitutional and systemic diseases), complications of pregnancy, tumors, infections, and misplacements of the uterus, and diseases of the adnexa, or the cause may be functional or endocrinopathic in character. A diagnosis of functional bleeding is to be made only after a complete examination has been made and the various organic causes of uterine bleeding have been excluded.

Before entering into a discussion of functional uterine bleeding, I will first briefly review the endocrine relationships of the anterior pituitary gland, the ovary, and the uterus.[1] A recurrent cycle of changes involving these organs begins with puberty and the establishment of the menses. These changes are regulated by hormones of the pituitary gland and the ovary.

Four hormones are concerned, two of which originate in the anterior pituitary. These are called the gonadotropic hormones and are designated as pituitary A and pituitary B, and two hormones are produced by the ovary, one of which is called the estrogenic hormone[2] and the other the progestational hormone or progesterone.[3] Ideas concerning the gonadotropic action of the anterior lobe of the pituitary gland came following the experimental work by Philip E. Smith in 1926.[4] He implanted fresh anterior pituitary substance into immature rodents with the result that follicular growth occurred and also corpus luteum formation took place. About the same time Aschheim and Zondek[5] found that similar changes occurred in immature mice when anterior pituitary implantations were done. Following this, much investigation has been done, and a mass of literature has accumulated, summaries of which are given by Van Dyke[6] and Engle and Levin.[7]

The two gonadotropic hormones originate in the basophilic cells of the anterior pituitary and control the functional activities of the ovary. One of these factors, pituitary A, stimulates ovulation in that it starts the Graafian follicle to ripening and causes the granulosa cells to produce one of the ovarian hormones, estrogen, which in turn acts as a growth stimulus to the endometrium. This is called the proliferative or estrogenic phase of the menstrual cycle and lasts up until the Graafian follicle ruptures—that is, until ovulation—which occurs about the fourteenth day after the last menstruation. The amount of follicular hormone formed steadily increases throughout the menstrual cycle and reaches a peak just before the menstrual flow begins. During this time the endometrium shows a steadily increasing proliferation in response to this estrogenic hormone stimulation. The endometrium increases in thickness, the glands develop; they become larger, wider, and somewhat tortuous, and there is gradually increasing vascularity. While this growth effect is especially pronounced on the endometrium, the myometrium is also affected to some extent. When the follicle is ripe, ovulation occurs and a corpus luteum is formed from the ruptured Graafian follicle. Pituitary B then stimulates the cells lining the corpus luteum—i. e., it stimulates the granulosa cells to produce the corpus luteum hormone—progesterone. The latter, in conjunction with estrogen (which continues to be formed in the corpus luteum), produces a still greater endometrial development. The superficial endometrial glands are straight and narrow, while the deeper glands elaborate a secretion rich in mucin and glycogen. Leucocytes and large mononuclear cells collect in the stroma about the glands. The endometrium by these changes is being prepared for the reception of the fertilized ovum. This is called the secretory or progestational phase of the menstrual cycle; it lasts until necrosis and disintegration of the endometrium occurs, which marks the beginning of the menstrual or bleeding phase of the cycle.

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The corpus luteum begins to retrogress about twenty-four to thirty-five hours before the onset of the next menstrual bleeding, and it is believed that the bleeding is due to the removal of the corpus luteum hormone. At this same time there is also a sudden drop in the production of estrogen. The latter is inhibitory to the production of the pituitary hormones, and as the estrogenic hormone steadily increases during the cycle there is a diminution of the gonadotropic pituitary hormone. As the pituitary factors are removed, there is a sudden decrease of the production of estrogen and progesterone with the resultant bleeding. The inhibitory influence of the estrogenic hormone on the pituitary is then removed, and the pituitary again begins to produce the gonadotropic hormones, and a new cycle is started. In normal menstruation, the evidence indicates that the withdrawal of progesterone is the important factor, while in most cases of functional bleeding the withdrawal of estrogen alone is concerned.

This résumé of the endocrine factors concerned in normal uterine bleeding has been given because for some time research workers have concentrated their efforts to understand functional uterine bleeding on the basis of the endocrine factors involved. Schroder,[8] in 1915, was the first to explain the mechanism of functional uterine bleeding. He described a type of uterine bleeding which he called metropathia hemorrhagica and held that it was caused by the abnormal persistence of unruptured Graafian follicles, which caused abnormal estrogenic stimulation, and a hyperplastic condition of the endometrium. In this condition, in as much as the follicles are unruptured, there is an absence of the corpus luteum and the hormone progesterone. In other words, there is a failure of ovulation. While the largest group of functional bleeding cases can be explained by a failure of ovulation with an abnormal production of estrogen, with hyperplasia of the endometrium and an absence of the corpus luteum hormone, progesterone, there are some cases which take place in an endometrium which histologically appears normal or even atrophic—in other words, in the presence of a secretory or ovulatory endometrium rather than in an anovulatory endometrium. Such cases may be due to an imbalance between the two ovarian hormones, or it may be, as Novak has pointed out, certain endometria are refractory to the growth stimulus of estrogen. These mechanisms explain the largest number of cases of functional bleeding,[9] but unfortunately, not all cases are to be so readily accounted for. Other factors may be concerned such as a dysfunction of the uterine musculature, disturbances of the vasomotor nervous mechanism, or some disturbance of the spiral arteriolar system of the endometrium. An early explanation (1882) by Brennecke[10] was that the endometrial lesion, now known as hyperplasia, is the result of endometrial hyperemia, caused by abnormal ovarian stimuli, which involve the nerve mechanism, and to this hyperplastic condition he gave the name "endometritis ovarialis." However, of these latter factors, the uterine musculature, the vasomotor nerves, and spiral arteriolar mechanism, we know very little, but Markee,[11] by directly observing endometrial tissue which had been implanted in the anterior chamber of the rabbit's eye, has shown the fundamental role of the spiral arterioles of the endometrium in normal menstrual bleeding. He demonstrated an alternate spasm and dilation of these vessels, and that menstrual bleeding is the composite result of small isolated nonsynchronized hemorrhages from individual spiral vessels as a result of the ischemia produced by prolonged spasm. These studies indicate that menstruation is predominantly a vascular phenomenon, but this does not minimize the importance of the endocrine mechanism because the vascular changes are subject to control by the ovarian hormones.

The Role of the Thyroid.—The enlargement of the thyroid at puberty, during menstruation, and during pregnancy would seem to indicate some relationship between the thyroid gland and pelvic physiology. Women with diseased thyroids usually have menstrual disorders. Kocher has observed that patients on whom a too radical goiter extirpation has been performed suffer from menorrhagia. Such cases have been successfully treated with thyroid extract. The influence of thyroid extract on disturbances of pelvic endocrine function has been known for a long time, but the mechanism of its action is still unknown. That the exact relationship between the thyroid and the genitals is not understood is shown by the fact that in hypothyroidism there may be amenorrhea or menorrhagia, and thyroid extract is effective in the treatment of both conditions when the gland is diseased. The thyroid may exert its action through its general action on metabolism or it may be through some influence on the pituitary. It has been found that, following hypophysectomy in mammals, there is an atrophy of the thyroid and the adrenals, and further, that this atrophy can be corrected by replacement therapy. It is now held that there is a specific hormone of the anterior pituitary with thyroid-stimulating effects. It has been designated as the thyrotropic hormone. The administration of the thyrotropic hormone to normal animals results, in the course of a short time, in enlargement and hyperplasia of the thyroid gland.

Pathology.—In the characteristic case of functional uterine bleeding the endometrium is enormously overgrown and polypoid, so that curettage reveals large quantities of firm polypoid tissue. This may suggest carcinoma of the body of the uterus, but in polypoid hyperplasia one does not encounter the friability and necrosis as would be seen in a corresponding degree of malignant involvement. A frozen section study would differentiate the two conditions at the operating table.

In a large percentage of bleeding cases there is no polypoid formation, but the endometrium is only much thicker than normal and in some it may appear quite normal.

Microscopic Pathology.—In the hyperplastic cases there is an increase in glands and stroma. The glandular and surface epithelium is tall, the nuclei stain deeply, and mitotic figures are common. Mitoses may be seen frequently in the stroma also. There is a great variation in the size and shape of the glands as opposed to the uniform size and shape in the normal endometrium. Some of the glands are large and cystic, and others are quite small. This gives rise to the Swiss-cheese pattern as suggested by Novak[12] in 1924.

There are areas in which the endometrium shows degenerative changes with round-cell infiltration and thrombosis in the blood vessels. These are the infarctlike areas of necrobiosis from which Schroder thought the bleeding took place. But in the light of more recent studies it is thought that these areas of necrobiosis are in some way produced by abnormalities in the behavior of the spiral arterioles of the endometrium.

Clinical Characteristics. — Functional bleeding may occur at any time during the reproductive life of the woman, but perhaps the largest percentage occurs about the time of the menopause. For convenience in handling these cases Crossen groups them according to age periods as follows:

1. Infancy and childhood. At birth or a few days afterward, the principal cause of bleeding is an endocrine disturbance due to the withdrawal of maternal estrogen at birth. It is of no clinical importance and requires no treatment. Endocrine disturbance and uterine bleeding may also be seen in children with ovarian, adrenal, pituitary, or pineal tumors.

2. During the developmental period, age ten to twenty, the causes of bleeding in the order of relative frequency are: endocrine disturbances, blood dyscrasias, inflammatory lesions, pregnancy complications, ovarian tumors, uterine tumors, and malignancies.

3. Childbearing period—twenty to forty-five.
   (a) Conditions associated with pregnancy.
   (b) Pelvic inflammatory disease.
   (c) Myomatoma.
   (d) Ovarian cysts.
   (e) Endocrine disturbances.
   (f) Blood dyscrasias.
   (g) Pelvic malignancies.

4. Involution period—forty-five to sixty.
   (a) Malignancies of the pelvis.
   (b) Endocrine disturbances.
   (c) Inflammatory conditions.

5. Senile period—over sixty.

Bleeding at this time is usually due to carcinoma of the cervix or of the body of the uterus or of the ovaries.

Treatment.—The age of the patient and

whether or not the reproductive function is to be preserved are important factors which determine the treatment, but regardless of the age group in which the patient falls she should be started on a general regime to control the bleeding and to build up the blood deficiency. Blood-building foods such as liver, beef, spinach, carrots, prunes, raisins, peaches, and apricots are advised. Iron therapy of some kind is instituted. Viosterol, three minims three times per day, or concentrated cod-liver oil should be given together with calcium lactate, calcium gluconate, or dicalcium phosphate. Calcium is given on general principles rather than because of low-blood calcium, since the latter is rare in these cases. Ergotin, stypticin, and cotton-root bark, one and one-half grains of each, given every four hours during the bleeding are helpful.

If the patient is one at or near the menopause, the question of treatment is easily settled, and the results are quite satisfactory. First, one must make sure that the bleeding is functional and that there is no intrauterine pathology. Especially at this age must adenomacarcinoma of the uterus be excluded. This is done by pelvic examination and a diagnostic curettage. If the microscopic examination of the curettings shows no malignancy, but on the other hand a hyperplastic or even normal endometrium, one may safely conclude that the bleeding is functional and proceed accordingly.

The application of radium is the treatment of choice. The value of radium in these cases is unquestioned, and about ninety-nine per cent can be completely cured by radium therapy. Eighteen hundred milligram hours of radium applied by means of an intrauterine applicator will abolish all ovarian function and bring about a cessation of the bleeding.

In patients who are younger and in whom the reproductive function must be preserved a reliable basal metabolism test is one of the first steps, and if this test is low (and in some instances if the test is normal), thyroid gland substance one-half grain twice daily is started, and the dose is gradually increased. The basal metabolism test is checked from time to time to determine the proper dosage. A history of crying spells, depression, irritability, marked constipation, easy fatigue, hair falling out, and gain in weight is suggestive of hypothyroidism. Should there be no facilities for the basal metabolic determination, those patients with evident hypothyroidism may be given thyroid therapy cautiously with a close watch on the blood pressure, pulse, and nervous reactions as the dose is being increased.

If, after the general measures have been tried and if thyroid treatment is unsuccessful (or in those cases where thyroid therapy is not indicated), a pituitary investigation should be carried out, the sella turcica should be X-rayed, sugar tolerance tests should be done, and the visual fields examined. Hormone tests as described by Frank are helpful, but a specially-equipped laboratory is necessary for these studies, and in their absence test treatments with various hormone preparations are to be tried. The fundamental conception in organotherapy is that the bleeding is due to excessive estrogenic stimulation and a lack of progesterone. The object of treatment is to correct this situation. Results are far from satisfactory, but so often an excellent response is obtained.

The Administration of Anterior Pituitarylike Hormones and of Extracts of Anterior Pituitary.—The action of these preparations is much the same, but preparations of the former type contain a preponderance of the hormone resembling pituitary B, while the latter group contains some pituitary A. The anterior pituitarylike preparations include antuitrin-S, follutein, autophysin, A. P. L., and gonadogen, while the pituitary extracts include antuitrin and gynantrin.

These products have been given in the hope that they might produce luteinization in the human ovary as they do in laboratory animals. However, histologic studies on human ovaries have demonstrated that this luteinization does not take place, but in a fair percentage of cases highly satisfactory results are obtained nevertheless. Just how these products exert their influence no one has been able to explain. Hamblin, Geist, and others[13] have shown that in human beings antuitrin-S produces its beneficial effect by diminishing the estrogen content of the atretic follicles by a destructive action on the follicles rather than by luteinization as was first thought.

In the use of preparations of this class injections of 100 to 1,000 units are given daily when the bleeding first starts, and the injections are continued until the bleeding is controlled. If it is not controlled in six or eight injections, one should resort to some other preparation, because, if satisfactory results are to be had, they should be in evidence by this time.

Progesterone.—This hormone has therapeutic possibilities in the treatment of functional uterine bleeding. The occurrence of the menses normally coincides with the disappearance of progesterone; in other words, progesterone aids in holding normal bleeding in check, and the administration of this (the corpus luteum principle) furnishes the patient with the hormone that is missing in nonovulatory bleeding.

The Use of Testosterone Propionate.—Almost all investigators believe that the androgenic hormones exert an inhibitory effect upon the growing Graafian follicle, and by the administration of these substances estrogen production and endometrial proliferation are lessened. There is evidence, too, that in the progestational phase of the menstrual cycle the effect of progesterone is supplemented and enhanced by the androgenic principle. Novak states that in his experience it has given more satisfactory results than either progesterone or the pregnancy-urine preparations. During the bleeding phase of the cycle, it may be given in doses of ten milligrams three times per week. Testosterone therapy in functional bleeding is new, and one should watch for undesirable side effects as hirsutism and other masculinization phenomena such as voice changes. Should these appear, the drug should be discontinued.

Combinations of Endocrine Therapy.—The alternate use of estrogenic hormones and progesterone has been effective in the hands of some.

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THE TENNESSEE LAW TO PREVENT THE SPREAD OF VENEREAL DISEASES THROUGH MARRIAGE

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The Tennessee premarital examination law, which was passed by the General Assembly in 1939, became effective July 1, 1941. During the period, July 1 to November 30, 1941, specimens were received from 12,905 applicants for marriage licenses in certified laboratories in Tennessee. Among this group, 422 were found to have positive serologic reactions, indicating that approximately 3.3 per cent of the applicants had syphilis.

There have been many questions asked by physicians concerning the premarital examination law since the law became effective. It is the purpose of this paper to answer some of these questions. In order to answer them clearly, it has been found necessary to include certain information dealing with the diagnosis of gonorrhea and syphilis which is accepted at present by specialists in these fields.

1. Is any person who wishes to obtain a marriage license in this state exempt from having an examination?

No. Every person applying for a marriage license in Tennessee must present to the county court clerk a properly-executed medical certificate or a court order.

2. Will the certificate form used in other states be accepted in Tennessee?

No. Applicants for marriage licenses in Tennessee who are residents of other states are required by law to present the medical certificate form prepared and distributed by the Tennessee Department of Public Health.

3. Is it possible for a resident of another state who plans to marry in Tennessee to obtain the examination in the state in which he resides?

Yes. Any physician licensed to practice medicine in the state in which he resides may examine an applicant who wishes to marry in Tennessee. The serologic test must be made in a laboratory certified by the Tennessee Department of Public Health. The only out-of-state laboratories which are certified to perform serologic tests are the central laboratories of state and territorial health departments, laboratories of the United States Public Health Service, the Army, the Navy, and laboratories of the author-serologists of the approved tests.

4. Are medical certificates for applicants for marriage licenses signed by osteopaths accepted by county court clerks?

Yes. The attorney general of Tennessee has ruled that medical certificates of applicants signed by osteopaths must be accepted as valid by county court clerks. This ruling is based on the opinion that the Osteopathic Act, which was amended in 1939, takes precedence over the Premarital Examination Act, which was passed in 1939, and which states that only physicians who are graduates of reputable medical schools and licensed to practice medicine in the state in which they reside are permitted to examine applicants for marriage licenses.

5. Is it necessary for physicians of Tennessee to have copies of the medical certificate forms?

No. Since it is necessary for the serologic test to be made in a certified laboratory and the laboratory portion of the certificate must be signed by a representative of the laboratory, it is not necessary for the physician to have copies of the forms. The certified laboratories, county court clerks, and local health departments keep supplies of the forms on hand at all times. If a physician receives a request for a form from a person in another state, copies as necessary will be sent to the person concerned if the physician will forward the request to the Tennessee Department of Public Health at Nashville.

6. How may a physician be assured that the laboratory will send him a medical certificate form along with a report of the results of the test?

If the physician will write the word "premarital" in bold letters in the upper left-hand corner of the request slip which he sends to the laboratory with the specimen of blood from the applicant, a medical certificate with the laboratory portion properly completed will be sent to him when the examination result is reported.

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*From the Tennessee Department of Public Health.

7. Does the laboratory send the physician a medical certificate with the laboratory portion of the form filled out when a positive serologic test has been found?

Yes. A single serologic test is only one link in the chain of evidence to be used in making a diagnosis of syphilis. The responsibility of making the diagnosis rests solely with the physician.

8. When must the blood test be made on an applicant for a marriage license?

The law states: "To be valid such tests shall be made not more than thirty days before the issuance of the marriage license to which it applies."

9. Is the serologic test all the examination necessary in order for the physician to fill out the medical certificate?

No. The law requires that a physical examination be made and defines a physical examination as follows: "A physical examination shall include an inquiry by the physician of the party applying relative to their having or having had a venereal disease and inspection of the body to determine the presence or absence of the disease, together with securing such necessary specimens for laboratory examination." The inspection of the body is interpreted as the examination of the skin, mouth, throat, and genital or other regions for evidence of early syphilis, and the examination of the genitalia, including the cervix and vagina in women, for evidence of gonorrhea infection.

10. What conditions must be present for the diagnosis of syphilis to be made?

For a diagnosis of syphilis to be made it is necessary to find:

(a) Treponema pallida on dark-field examination of a specimen obtained from a suspected early lesion of syphilis, or

(b) Lesions suggestive of syphilis verified by at least one positive serologic test, or

(c) History of primary lesion or previous treatment verified by at least one positive serologic or spinal fluid test, or

(d) Not less than two positive serologic tests regardless of the absence of conclusive clinical evidence or of a history of infection.

11. What conditions other than technical errors are now considered to give a false positive serologic test?

The following conditions are found most commonly responsible for biologic, false, positive serologic tests for syphilis: infectious mononucleosis, malaria, yaws, leprosy, and vaccinia. Several other conditions have been thought to give false positives, included among which are upper respiratory infections, but the evidence sustaining such reactions is so incomplete that it is questionable.

12. What is the significance of consistently positive serologic tests?

In speaking of the significance of serologic tests in this country, Kolmer states that positive reactions by two or more tests in a reliable laboratory (or positive reactions in two or more reliable laboratories) almost invariably mean the presence of syphilis, provided leprosy and malaria can be ruled out.

13. How frequently is latent syphilis found?

Among 10,000 patients in the Johns Hopkins Clinic, one-third of all males and nearly one-half of all females presenting themselves for treatment had no physical evidence of infection. Forty-three per cent of the patients admitted to the clinic with latent syphilis could give no history of infection.

14. When should a physician sign a premarital medical certificate, even though the applicant has syphilis?

(a) When it can be proved that the applicant has congenital syphilis. The transmission of congenital syphilis from one marital partner to another or from a female to her offspring is not believed to occur. If such infections take place, they are extremely rare.

(b) When the applicant has had the disease for four years or more. The chances of acquired syphilis being transmitted to a marital partner after the person has had the disease for four years are not very great.

(c) When the applicant has had the disease for less than four years, but has been given at least twenty doses each of an approved arsenical and a heavy metal. This amount of treatment, when given to early cases of acquired syphilis within a total period of one year and perhaps within a period of eighteen months, prevents the infection from being transmitted from one infected person to another by direct contact in almost all cases. Even though the physician signs the certificate after the above amount of treatment has been given, he should urge the patient to continue treatment until an adequate amount has been given.

(d) Although the chances of transmission of the disease by a female with acquired syphilis to her offspring decrease with the duration of her infection and with the amount of treatment she has received, syphilologists advise that every woman with acquired syphilis be given treatment during each pregnancy regardless of these factors. Physicians should so advise such female applicants with acquired syphilis of this fact before signing the medical certificate.

(e) Since a large percentage of latent cases of syphilis do not give a history of infection and it is impossible in such cases to determine the duration of infection, the physician may be at a loss to know whether or not a medical certificate should be issued. Since the majority of infections are obtained before the age of thirty, the physician may, after giving each patient a complete examination, use this arbitrary age to estimate the duration of infection if he thinks he is justified in doing so.

(f) When a physician doubts that an applicant has syphilis, even though two or more serologic tests have been found positive, or if he is not able to decide if he is justified in presenting a medical certificate to the applicant with syphilis, he may wish to call into consultation another physician, perhaps a syphilologist, and after a study of the case make a final decision.

If an applicant with acquired syphilis is given a medical certificate and the marital partner becomes infected with the disease, the responsibility for the infection rests with the physician who gave him the medical certificate.

15. When may a court order be given for the marriage license to be issued?

A court order for the issuance of a marriage license is necessary after a hearing as required by law and after it has been determined by medical evidence that:

(a) The applicant for whom the medical certificate has been withheld is found to be free of venereal disease or is not in a stage of such disease which may become communicable.

(b) The applicant for whom the medical certificate has been withheld is pregnant and marriage is necessary to confer legitimacy on the unborn child.

(c) Both applicants have the same venereal disease and sterility exists in one or both of said applicants.

16. What is the value of cultures and smears in the diagnosis of gonorrhea?

In early infections of either sex the carefully-conducted gram stain smear serves to confirm the diagnosis of gonorrhea in a large percentage of patients. As the disease becomes chronic the method loses much of its value and the finding tends to become, in a measure, the personal opinion of the microscopist. In a recent study by Van Slyke in New York, 664 prostitutes with endocervicitis were cultured and 142 were found positive. Smears were made from the 664 prostitutes and given to three qualified microscopists for study with the gram stain. One microscopist found 164 positive slides, one found sixty, and the third found forty-four of the slides positive. It is evident from this study and from similar studies made elsewhere that the smear method is of little value in the diagnosis of chronic gonorrhea.

Culture findings have been found to parallel the clinic course in early and late chronic infections in men. Positive findings are also the rule in early disease in women. Mahoney, in a group of approximately 2,500 prostitutes, found it possible to confirm the diagnosis of gonorrhea in only twenty-one per cent by use of the culture method. From clinical evidence and from response of the cervical infection to chemotherapy, a much higher proportion of these prostitutes would have been considered as probably infected. Since it must be recognized that not any laboratory examination is infallible, it behooves every physician to rely to a certain extent on sound clinical judgment in the diagnosis of gonorrhea and to consider all laboratory reports as only corroborative evidence to be weighed with or against the facts obtained by carefully-taken histories and complete physical examinations.

17. What is the present accepted opinion as to the value of sulfathiazole in the treatment of gonorrhea?

Numerous studies have indicated that between eighty and eighty-five per cent of all cases of gonorrhea can be cured clinically and bacteriologically when sulfathiazole is given in adequate doses. The treatment of males with gonorrheal infections is much more satisfactory than the treatment of females with such infections.

18. When the regulations governing the prevention of venereal diseases through marriage were passed, why was the decision as to the diagnosis and communicability of gonorrhea in any applicant for a marriage license and the issuance of the marriage license to the applicant left to the discretion of the examining physician?

These decisions were left to the discretion of the examining physician because:

(a) It was inadvisable to recommend the use of the laboratory solely in determining the presence or absence of gonorrhea in an applicant. Since it has been shown that smears and cultures are not reliable in a sufficient number of cases, the presence or absence of gonorrhea in applicants must be left to the clinical judgment of the examining physician. When an applicant has clinical signs of gonorrhea, the physician, if he so chooses, may make a laboratory examination. However, if such examinations are negative, the physician should rely on his clinical judgment in determining whether or not the applicant is given a medical certificate. In some instances it may be advisable for a therapeutic test to be made.

(b) Sulfathiazole has been found to cure clinically and bacteriologically a large portion of gonorrhea cases. We do not think it advisable, particularly in men, to refuse an infected applicant a medical certificate in all instances. Instead of refusing the certificate, it is suggested that the physician postpone the presentation of it to the applicant and if possible cure him of the disease.

COMMENTS

From experience gained to date in the enforcement of the premarital examination act there appears some fairly definite justification for minor modifications of the original act. For instance, since there are no laboratory tests of sufficient diagnostic value for gonorrhea, the physician must depend largely upon clinical signs and symptoms to make a diagnosis. There is some very definite justification for amending the law to make it applicable to syphilis only or to decrease the period between examination and marriage from thirty days perhaps to ten or fifteen days. At present it is quite possible for a person to be infected with gonorrhea or syphilis between the time of examination and the time the marriage license is obtained and yet comply fully with the law. The law requires that the Tennessee medical certificate form be used. An amendment should be considered to permit acceptance of medical certificates from other states where essential data are recorded. The Tennessee Department of Public Health will welcome any suggestions which might be offered by the medical profession of the state toward improving the law or the regulations pertaining to its enforcement.

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NEUROSYPHILIS AND REPORTS OF CASES TREATED WITH MALARIAL THERAPY*

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So much has been written on the subject of neurosyphilis and its treatment, in both lay and medical literature, especially in the past few years, it is with some apology that I offer you the following short paper, giving a very short review of history, etiology, symptoms, pathology, and a report of the treatment of 104 cases of neurosyphilis in a state hospital during the past seven years.

Syphilis of the nervous system has been known for centuries, as anatomist Willis gave a complete description of general paralysis of the insane in 1672. The word neurosyphilis is a broad term which includes all the disorders of the nervous system, including the pathology found in the surrounding tissue and blood vessels passing which are caused by the spirochetae pallida. So neurosyphilis affects not only both the parenchymatous and interstitial tissues of the central nervous system, but it is the involvement of the cortical parenchyma which makes the disease so malignant and so resistive to all types of treatment. General paralysis through the years has been one of the fatal diseases, so much so that Stokes says: "That nothing should be called general paralysis which has not been subjected to a severe systematic treatment over a period of time without success." The other far-wrong extreme is the psychiatrist that feels that all cases of neurosyphilis should be diagnosed as general paralysis of the insane.

In the early months of 1933 the commissioner of institutions had a survey of syphilis made at the two state prisons. At the main prison at Nashville 419, or twenty per cent of all inmates, had a positive blood, and 232, or thirty per cent of all inmates, at the Petros prison had positive Wassermanns. A spinal puncture was made on 235 at the main prison and fifty-seven, or twenty-four per cent, were positive. A spinal puncture on 203 at Petros was made and forty, or twenty-one per cent, showed a positive report. The Criminal Insane Hospital at Nashville had only been recently opened, and ninety-one of these prisoners were transferred there for treatment; the remainder of the 104 considered in this paper came from the three state hospitals. All were criminal patients. The total number treated was 104, sixty-eight white and thirty-six colored. All were given a complete physical examination on admission to the hospital, blood Wassermann tests were made, and a complete examination of the spinal fluid, including a Wassermann test, a cell count, and a colloidal gold test. The spinal pressure was determined by a themanometer.

It was quite a task to treat this number, as many had a fairly short period of time to serve in prison, and neither they nor their people could be reasoned with regarding their condition, so a very active treatment was begun at once. All the cases were classified in only three classes as follows: asymptomatic neurosyphilis, clinical neurosyphilis, and general paralysis of the insane. Asymptomatic neurosyphilis, or that type which is characterized by a positive spinal fluid test, but in which there are neither objective nor subjective symptoms of involvement of the central nervous system. This form of neurosyphilis may be present in either the early or late form of the disease, and it may be present in association with other complications, such as syphilitic aortitis or hepatitis. Asymptomatic neurosyphilis is a highly important manifestation of the disease because it may be the forerunner of a severe neurosyphilis, and by its early recognition and adequate treatment the development and results of the late clinical forms may be prevented. In clinical neurosyphilis you have, in addition to a positive spinal fluid, both objective and subjective symptoms of involvement of the central nervous system. The symptoms usually appear within the first five years after history of infection, and are characterized by severe headaches, dizziness, lightning pains, possibly delirium, all the neurological signs, and possibly some change in personality. General paralysis is characterized by all of the symptoms of neurosyphilis with many others added. For convenience in the description we will divide it into three states—viz., preconvulsive, convulsive, and incontinence.

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In the preconvulsive state the disease usually manifests itself by defects and the physical symptoms of the oculomotor and tendon reflexes, especially with an increased Romberg, and the Argyll-Robertson pupil with delusions of grandeur, also the usual laboratory findings and an increased cell count with a positive gold curve.

In the second stage all of the above symptoms are increased and the beginning of seizures. These epileptiform seizures may be severe or very slight, and may involve any portion of the musculature. They may or may not be accompanied by the loss of consciousness.

The third stage may be said to begin from the time the patient begins to soil himself. All physical and mental symptoms become more marked, and the patient shows marked deterioration and finally sinks into a coma and dies if some other disease does not step in and finish the task. Most of the pathological changes are microscopic, but there are some gross changes that may be seen in the late stages. The dura mater usually adheres to the skull, and all the brain membranes are very much thickened. Hemorrhagic areas are noticed. The membranes cannot be stripped apart. On the whole, the brain looks smaller. The frontal area is the one that is most atrophied. The microscopic pathology described very briefly is excessive formation of new capillaries and increase in elastic tissue. Lymphocytes are common in the midspaces. In the advanced type degenerative changes are common in the blood vessels.

Prognosis.—The course of most types of asymptomatic and clinical neurosyphilis is very good under early and active treatment, but remember that no general statement can be made because there are so many different manifestations of the conditions in different stages. The prognosis is grave in most of the meningeal types, but on a whole with very active treatment carefully carried out over a long period of time it is generally favorable.

It is different with paresis, even with modern treatment. Although remission occurs for quite a length of time, active treatment and the process of the disease are very slow. It may occupy many years, but, generally speaking and until recent years, it was counted a fatal disease. Everyone is ready to admit that antisyphilitic treatment is at its maximum value in the early stages of the disease. From the onset the value of treatment declines rapidly, and it is at its lowest ebb in the treatment of neurosyphilis. Neurosyphilis must be treated very intensively and over a very long period of time.

TREATMENT

Wagner-Jauregg, who introduced the malarial treatment of paresis, has experimented with vaccines and tuberculin and has come to the conclusion that to get results you must have more than a high temperature; you must have an actual presence of an infectious disease. Up to 1924 he had reported over 200 cases with twenty-five per cent in complete remission and able to resume their former occupations. The result of his experience has awakened and for the past ten years has held the center of the therapeutic stage in paresis.

Dennis, Gilkey, and Palsula in an article in the *American Journal of Syphilis* in 1931 advocated the use of malaria in all cases of syphilis. They stated that the malarial parasite itself, or through some of its secondary action, was antagonistic to the presence of syphilis.

Wilkus states that 100 patients treated with malaria at an Illinois State Hospital gave results of sixty-six per cent improved, twenty per cent unimproved, and fourteen per cent worse. Many agree with Wagner-Jauregg, including the state hospital in Illinois, Austin State Hospital, and many others, that heat is not the sole factor that produces results.

The diathermy method of producing fever was begun by King and Cocke in 1928. They reported twenty cases, of which number eight were definitely improved.

Neyman and Osborne and others have reported favorable results with the percentage of remissions about as reported with malaria.

Freeman, Fong, and Rosenburg, also Epstein, Solomon, and Kopp, are not so favorably impressed with the diathermy treatment of paresis, saying it has some value, but not equal to malarial therapy.

Nelson and Standifer claim good results from fever produced by typhoid preparation, one cubic centimeter of the suspension being injected, and at the height of the fever in two or more hours another cubic centimeter is injected.

Of the 104 cases that we have treated in the past seven years, eleven were asymptomatic neurosyphilis, fifty-nine with clinical neurosyphilis, two tabes, two juvenile paresis, and thirty with general paralysis of the insane. All cases were treated the same. They were first given malaria. About five cubic centimeters of blood were injected intramuscularly, and all colored patients were given from two to five cubic centimeters intravenously. The earliest chill appeared on the third day and the latest on the twenty-fourth day after inoculation, the average being ten days. The chills come earlier when the blood is given intravenously. Five to sixteen chills were allowed, depending on the physical condition of the patient; however, we tried to keep the average up to ten. All patients were considerably weakened, losing much weight; some were quite anemic. Seven colored patients had no chills after they were inoculated two or three times. The diathermy treatment was used on these. We received the same results when the inoculated mosquito was used. To prevent any spreading of malaria in the community all patients were subjected to a regular course of quinine treatment. Our treatment of each case consisted of the oral administration of thirty grains of quinine bisulphate the first day and fifteen grains daily the following three days. Then a pause is made for three days, after which we give fifteen grains daily for four days, making a total of 135 grains. This was our routine treatment of malaria, and we never have seen a relapse in our patients. We first started all cases following the malaria on neo, but later changed to silver-salvarsan and feel that it is much superior to neo. The dark color of this drug makes it difficult to determine if the blood is flowing into the syringe, and you are sometimes left in doubt whether the vein has been entered properly. The maximum dose is three-tenths gram given at weekly intervals for thirty weeks. Then we would give a soluble bismuth for a period of ten weeks, giving twice a week. After this we would return to silver-salvarsan along with mercury and iodides, giving large doses of both mercury and iodides three times a day, along with the salvarsan once a week for the entire thirty weeks. All of the neurosyphilis cases are outlined above, but the cases of general paralysis after the second course of silver-salvarsan were given tryparsamide continuously for a period of fifty weeks, and during all these weeks we would alternate bismuth and mercury on a portion of these patients. We had eye complications following the use of the tryparsamide in only one patient, a man forty years of age who had some permanent impairment of vision. He developed pneumonia after about ten shots of tryparsamide and was off treatment for eight weeks. He was returned to the same treatment after the above illness and after the second treatment developed this eye trouble. We believe with Cady and Alvis that you should always give an intensive preliminary treatment by the use of mercury, bismuth, and the arsphenamines to reduce both the therapeutic shock and the eye complications before you start the use of tryparsamide.

Of the asymptomatic group, nine have a negative spinal fluid. One left the institution after eleven months with a positive spinal fluid, and one received several years' treatment and was still positive.

Of the fifty-nine clinical neurosyphilis, thirty-two had a negative spinal fluid and eight had a positive spinal fluid with no change after treatment of from one to three years, and nineteen had a much less positive spinal fluid, but all had improved very much physically and are in good condition now after three to seven years. Several are back in trouble with the law again.

In the paresis group twelve, or forty per cent, showed marked clinical improvement; seven, or twenty-three per cent, moderate clinical improvement and able to return home and get along very well; and four, or thirteen per cent, showed no clinical improvement. Seven, or twenty-three per cent, died, but no death occurred until after five months after the malarial treatment. The serological findings in these cases of paresis were the blood Wassermann tests became negative in twelve cases, much less positive in seven cases, and no improvement was shown in four cases. The Wassermann test on the spinal fluid became negative in twelve cases, and in seven cases a much less positive reaction was exhibited. Of the two cases of tabes, both are in good condition, one working as a barber and one as a farmer. The two cases of juvenile paresis both improved very much with negative spinal fluids.

You well know that, in a state hospital for the insane, we got those patients suffering with general paralysis of the insane of long standing and in the late stages. You will note that we have avoided the word "cured," but these patients have been in a stage of remission for a great period of time, and we admit that the treatment of general paralysis of the insane does not show any brilliant results, but, on the other hand, we feel that malaria followed by long chemotherapy offers more than any other treatment known today.

I would like to urge the medical profession in general that they give their cases of syphilis intensive treatment as early as possible, and those with late cases, by all means the administration of hyperpyrexia, followed by prolonged chemicotherapy.

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THE FEMALE URETHRA*

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In the past five to ten years much has been written and presented about the pathological conditions which are present in the female urethra. A lot of extensive work has been done by several, notably Folsom, Stevens, and Young and his coworkers. Also during this time, because of their work, urologists and men of other branches of medicine have begun to realize the clinical importance of these pathological conditions. Practically all writings on the subject of the female urethra refer to the older anatomists and embryologists, Virchow, Tourneux, and Pallin, and the works of these men certainly help to explain the pathological conditions that we in the present day are finding.

In the light of what we are about to present, we think that if we will consider the female urethra to be a tubular organ approximately forty millimeters in length, lined in the distal two-thirds by a squamous epithelium which is continuous with that of the vagina and in the proximal one-third by a transitional epithelium, continuous with that of the bladder, and also that in this proximal one-third numerous glands are situated, we will be able to best understand some of the clinical symptoms which we shall present as being caused by pathology in this organ. Concerning what we have already said, we must say that there is some controversy concerning the presence of these glands in the posterior portion, but I am quite familiar with the work of Folsom and am firmly convinced that these glands are present in one hundred per cent of urethras. Another factor that is important, as we study this, is the lymphatics communicating with the cervix and perirectal region with that of the posterior urethra and thence again communicating with the lymphatics which surround the ureters, and then to the kidneys. At this time we are indebted to Winsbury-White and Alice Parker for their extensive research in tracing these lymphatics by injection of dye particles in one region and thus following it to another. Another factor which we shall consider is that which the physiologists and anatomists tell us concerning the nerve supply of this region and its effect upon the physiology of micturition. The physiologists call our attention to the fact that stimulation of nerve fibers in the region of the posterior urethra causes a contraction of the bladder. Later on I think we shall see the clinical significance of this fact. The most important of all of the above, we think, is the fact that glands are present in the posterior urethra, for we shall make the statement that these glands harbor infections contracted during infancy, later on to produce symptoms in adult life.

The most common presenting complaint of women consulting urologists is some disturbance of urination, and it is our belief that over ninety per cent of these disturbances are caused by some underlying pathological condition in their urethras. It is also our belief that in practically every instance the urethra is not the only pathological condition present. The question naturally arises, why is the female urethra such a common offender? In an attempt to answer this question we will try to give the life cycle of a urethra from the first time that it enters into being a pathological entity. In doing this we go back to the stage of infancy during the diaper-wearing period, and it is during this time that fecal contamination thus finds its way up the urethra, and this contamination becomes imbedded in the glands which we have stated are present in the urethra. It is a well-known fact that glands can harbor infection over a long period of time. Now, at the time these glands first become infected the symptoms in the infant can readily go by unnoticed; on the other hand, if the infection is acute enough, one might have the picture of frequent urinations of urine containing pus and some red blood cells with or without temperature elevations. I think it is a notable fact that the clinical picture of pyelitis of infancy occurs some twenty-five times more often in girl babies than in boy babies and, in referring back to the works of Folsom and Spence, who have cystoscoped these infants, and found in a very large majority that the urines in the upper urinary tract were free of bacteria and pus while the bladder urine was contaminated. At the same time their inspection of the urethra demonstrated, in a large number of cases, an acute condition present. Now the cases which these men refer to were those which had clinical pyelitis. It is also an interesting fact, which is not so well known, that quite frequently pyelitis in the female infant can be quickly cured by a simple urethral dilatation. It has been our pleasure to notice this on several occasions. As this person grows older, who has had the infected urethra, there is a good likelihood that during the later adolescent life there will be some evidence of disturbance of urination which manifests itself in an enuresis or a diurnal frequency, and sometimes we get the history of not having complete control over the bladder. The next stage in life when we frequently encounter this condition is at the onset of menses, at which time some patients can remember that they again experienced some frequency and maybe a little burning on urination. The next stage in life is the marital stage, and here again the individual may experience a variety of bladder symptoms, notably frequency and burning. For this the name nuptial pyelitis has been offered. In our opinion, nuptial pyelitis is merely some trauma to the infected urethra which causes an exacerbation of a frequency, burning, and possibly a pyuria and temperature elevations. It is after this period that we see the majority of cases. It has been noted by all of us that quite a number of women have bladder disturbances after pelvic examinations after surgery which require postoperative catheterizations; also in conjunction with radium implantations and the giving of X-ray treatments for pelvic carcinomas; also during the child-bearing age both in the person who is gravid and in the post-gravid period. Quite frequently in the post-gravid period it persists along with a slight cervical infection. At a later period in life it accompanies the various vaginal infections; it is seen with the so-called senile vaginitis; it is also in this period that the very rare cases of bladder-neck obstructions due to glandular hyperplasia are found. It has been our experience clinically in talking to these patients that in whatever station we find them we can get a history of similar difficulties all the way back to their childhood, and in some of the younger cases, who are accompanied by their mother, we will get a story of kidney trouble as an infant. We know that many of you have gotten this same kind of history from your patients.

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*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.

The diagnosis of pathology affecting the urethra is most often made from the history. The confirmation of this diagnosis and its classification is made upon its cystoscopic appearance.

The symptoms in order of occurrence are shown in Table I. This table was prepared by Dr. Harry Spence, Dallas, Texas, and was taken from his findings in 118 cases.

TABLE I

	Cases
Frequency	101
Dysuria, burning, urgency	96
Nocturia	74
Sensation of incomplete emptying	43
Referred pain	37
Gross hematuria	10

We think these figures are average; however, we would like to add another, and that is partial incontinence, which occurs in some ten per cent of cases. In attempting to analyze why and how these symptoms do occur, we think that the first five—namely, frequency, dysuria, nocturia, sensation of incomplete emptying, and partial incontinence—are due to the presence of an inflammatory process in a location where normal sensation bringing about the act of voiding arises. The inflammatory process causes a stimulation and the cerebrum misinterprets. We think it would be unwise to attempt to explain the referred pains which do occur, but at the same time we feel that it is more than just coincidence that these are most frequently found along the pathways of the connecting lymphatics.

We urge you to be highly suspicious of any pain which is not readily explainable which occurs in the abdomen, especially if it is also accompanied by some of the symptoms as listed above. We have all seen the referred pain in the male prostatic, and in this lesion we see exactly the same, and they readily disappear on institution of proper therapy.

As we read the works of Hunner, who dilates the ureters to enormous sizes for the relief of many of these pains, we cannot help but believe that his results are from dilating the urethra, which is necessary in order to pass large bougies to the upper urinary tract. We obtain the same relief in identical cases by passing large sounds to the bladder.

On the cystoscopic findings of this lesion we classify it as follows—granular and papillary, either with or without stricture. Then there are also the rarer lesions which include glandular hyperplasia, periurethral abscess, and fibrosis. The location is in the proximal one-third of the urethra. Extension is quite frequently to the trigone, and if we used the retrograde lens more as Douglass advises, we would realize this in more of our cases. Before this meeting a year ago Douglass for the first time accurately described the trigonal lesion which accompanies this lesion of the urethra. Most men advise the use of the foroblique lens system, Young his antegrade lens; we are all in accord that the Brown Buerger right-angle lens is not serviceable for this purpose. We use the small twenty-one Ravich, employing the lens which accompanies the operating unit. With any lens there are a lot of little tricks in handling the instrument. Frequently an area will appear normal only to be transformed into one teeming with papillary masses by angulating the scope and pressure on the distal end away from the field of vision. We think this is the reason it is overlooked by so many cystoscopists. The extent of stricture, if present, is determined by the ease with which the scope passes or by the firmness with which it is held after passage.

The laboratory examination of the urine is most often negative, but there are times when both the red and white blood cells and albumin can be found in the specimen; as a result of the urethral lesion, however, we do not at any time ascribe any of these to the urethra without first ruling out other parts of the urinary tract by X-ray, pyelography, and divided urinary specimens.

One of the most important parts of the examination of this patient is the search for the focus of infection which accompanies this disease. Frequently the history gives us our lead. It has been our experience to find some inflammatory pathological process present in the contingent tissues in practically every case. This compares with sixty per cent of those cases quoted by Spence. By far the most common site of a focus was the cervix; the next in order being the upper urinary tract; and thirdly, we think, come the vaginal and rectal sites. Also in this respect we do not think a trichomonas vaginalis infestation can be overemphasized as an etiological factor in production of symptoms. In the successful treatment of this lesion the focus must be cleared up during or before the active stage of treatment of the urethra, and frequently we find that when this is done the bladder symptoms will disappear spontaneously. There is one group of patients in which we do not find foci of infection so often, and that is the group which present themselves following some trauma which might be experienced during sexual intercourse, the passage of a small catheter postoperatively, and during pelvic examinations. We all see the patient who blames all of her urinary difficulties to being catheterized postoperatively, and we think that an explanation of this is that it is common practice to use a small catheter, and this instrument only serves as a traumatizing implement to the above pathological areas we have mentioned. On numerous occasions on patients who had complaints of frequency following catheterization, we have advised the passage of large sounds for them to immediately obtain relief. The results have been most satisfactory in this group. In our examination wherever there has been the slightest suggestion that the upper urinary tract might be the offender, we have done complete urological checkups, including microscopic tests of urine, functional tests, and pyelography, and rarely have we obtained any additional information other than that the upper urinary tract was normal.

The treatment of this condition in most patients is carried out by the passage of sounds. This is done at weekly intervals, using the male sounds and gradually increasing their size until thirty-two or thirty-four F. is reached. Papillary masses, when present, must be fulgurated, and, in doing this, fulguration must be light. It is also our opinion that by fulgurating just small areas at a time there is no additional inconvenience or reaction on the part of the patient. As mentioned before, all foci of infection must be cleared up in order to prevent recurrence. The usual story of these patients is that they are relieved after the first treatment, which is carried out at the time of the examination, and by the second or third visit are symptom-free. It is necessary to impress upon them the necessity of continuous therapy again in order to prevent recurrence. We know that in the majority of cases, if let alone, the symptoms will spontaneously disappear only to recur at frequent intervals in varying degrees. There is another group whose symptoms will disappear on eradication of the foci of infection, but here again recurrences are most common. For complete relief and assurance of minimum recurrences, we advise therapy to both the focus of infection and the local lesion. The offending focus may be a pyonephrotic kidney; and, if so, of course, this must be removed; on the other hand, the offending focus might be a slight cervical erosion, and, in this case, proper gynecological therapy must be induced. When there is infection present in the upper urinary tract, we use sulfathiazole, but other than this the only other measure utilized in the treatment is frequent sitz baths. The treatment in the adult is identical with that of the child. The results of treatment are most gratifying both to the doctor and the patient. The patients receive rapid relief at almost a minimum of inconvenience.

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DISCUSSION

DR. HENRY L. DOUGLASS (Nashville): Mr. Chairman and members of the Tennessee State Medical Association: I have enjoyed Doctor Roberts' paper on this important subject. It was an excellent discussion of a disease in which I have been interested for some time. Inflammations of the urethra and trigone deserve consideration for several reasons. First of all, women often suffer with urethritis and trigonitis. Not infrequently lesions in the urethra and on the trigone are overlooked even during cystoscopic examinations, and in such instances the patient's complaints may lead to unnecessary operations.

Adrain Halle chose urinary infections as the subject of his thesis which he submitted to the University of Paris in 1886. He expressed the belief that most of the infections, except tuberculosis, originated in the urethra, subsequently extending to the trigone, the ureters, and finally involving the kidneys. He concluded that the ureter bore the same relation to the kidney pelvis that the urethra bore to the bladder. I got the impression as a student in college that urinary infections originated in the kidney and were descending rather than ascending.

During the 90's and up until the first World War, the gynecological literature contained many articles dealing with this subject. Most of the articles emphasized diagnosis to the end that unnecessary operations might be avoided. You must remember that these patients have pain in the side, which in itself is confusing, but which is made more confusing by the fact that symptoms may be associated with normal urine. Thus one may be misled and attribute the pain to disease in the tube, ovary, or perhaps the appendix. Normal urine, abdominal pain, and the fact that lesions in the urethra and anterior part of the trigone are easily overlooked give this disease a treacherous character.

Bacteriology has aided a great deal in the understanding and treatment of urethritis. However, some writers have suggested that infection *per se* is not the whole story, at least in some instances. Numerous recurrences and the fact that a few suffer when there is no evidence of infection support this view. Then, too, the presence of bacteria and pus in the urine may disappear under the influence of drugs, such as sulfanilamide, without an associated subsidence in symptoms. Some of the early writers thought that faulty metabolism was largely responsible for symptoms. Duke, in 1923, stated that the symptoms of cystitis in some patients were allergic reactions induced by eating food to which they were sensitive. Whether or not certain reactions in the urinary tract may depend wholly or in part on abnormal chemistry in the tissues involved, as, for example, angioneurotic edema, noninflammatory edema, or allergic edema, remains uncertain. However, in the most rebellious forms of this disease where symptoms do not clear up even after evidences of infection have disappeared or where symptoms repeatedly recur at frequent intervals, I think this possibility should be considered and the remedies which are beneficial for such reactions—namely, calcium gluconate or calcium chloride intravenously—tried. If the symptoms are temporarily relieved by such treatment, that fact may shed light upon its etiology. In these cases the colon may act as a focus by the release through increased absorption of excessive amounts of toxic compound or even bacteria.

DR. JOHN L. SHAW (Memphis): The female urethra is subject to numerous diseases, some of which are peculiar to the female and seldom seen in the male. Doctor Roberts' most excellent paper has concerned itself with one of the diseases which forms one of the principal urological conditions causing the female to seek the doctor. This disease is the so-called nonspecific urethritis of the female. It is a common condition and constitutes an important part of female office urology. It is the "chronic prostatitis" of the female. There are many forms of the urethral involvement, varying as previously mentioned from a diffuse inflammatory reddening to a definite granular inflammation which may or may not be accompanied by a cystic state of the mucosa, pseudopapilloma, or a pseudomembrane. The symptoms are variable and numerous as previously brought out and may suggest upper urinary tract or gynecological disease.

The cause of the disease is obscure in most instances, and it is possible that infection acquired in early childhood, as Doctor Roberts has mentioned, might lie dormant until some event of living caused it to flare up in later life. I have not been able to obtain any definite history of previous infection of infancy or adolescence in the cases that I have seen. The history is that the patient has never had any previous urinary difficulty until the present complaint descended upon her. The condition is extremely rare below the age of forty years. The youngest case that has come under my observation was twenty-eight years of age. The older women are particularly susceptible to the disease, and the majority of the patients are usually past fifty years of age or in the postmenopausal age group. It is rare in the single women. Marital life and childbearing are definitely predisposing factors. The usual story is that they have never had any bladder complaint until after the baby was born. The cases not associated with pregnancy have often had catheterization performed on them at some previous date.

A few points in the diagnosis which was not touched upon by Doctor Roberts might be emphasized at this time. Pain on catheterization with a small catheter should make one suspicious of the condition. On several occasions the pain elicited by catheterization has required opiates for relief. Doctor Roberts mentioned stricture of the urethra. This does not often exist as a purely localized stricture, but more like a generalized diminution in caliber. A urethra of a caliber of twenty-two F. or less is almost practical proof of the condition and a size of less than twenty-six F. should be regarded as suspicious of the disease. It is needless to say that the most important part of the diagnosis is the endoscopic and cystoscopic examination of the bladder neck and trigone. The endoscopic examination should be made with a small-caliber instrument or much of the findings in the urethra will be obscured by the pressure and the dilation of a large instrument. Disease of the upper urinary tract must always be excluded by careful studies, and if present requires the first attention in treatment. I have no new addenda to the treatment. I find, as Doctor Roberts has stated, that dilation controls most of the cases. Occasionally in obstinate cases twenty or forty per cent silver nitrate solution is applied topically to the proximal part of the urethra. Light fulgeration is reserved for the cases showing pseudopapilloma or advanced cystic state. In cases having a pyogenic upper urinary infection, sulfathiazole has been found most effective for the common types of organisms. My experience with the method of treatment of Doctor Douglass has been too limited to offer any worthwhile comment.

DR. J. B. NEIL (Knoxville): Mr. Chairman and gentlemen of the Tennessee State Medical Association: A good many years ago Doctor Roberts, Sr., read a paper in this hall, giving the findings in 100 consecutive cystoscopies. At that time he said very little about finding trouble in the female urethra, if I remember correctly. I discussed the female urethra at that time. I became interested in this subject very much about ten years ago, and at that time I so frequently found trouble in the urethra that I made it routine to urethroscope all of the female cases that I cystoscoped. For some reason, the medical profession as a whole seems to forget that a woman has a urethra; it is only about an inch and a half long, as Doctor Roberts has brought out, and they usually tell them they have cystitis. Of course, we know that cystitis as a separate entity does not exist; that it is either due to infection from the kidneys above or infection from the urethra below. Clear up either one, and the cystitis eventually clears up.

I remember in 1931, when I became interested in this subject, I had three female patients who had all the symptoms of a bladder-neck obstruction or a median bar obstruction in the male. I examined those patients and found that they all had residual urine, proving positively that there was an obstruction at the bladder neck. There are only two conditions that give residual urine: a bladder-neck obstruction and a spinal cord bladder. I can look back now and see a good many women that I had not been able to relieve by the standard methods of treatment then, and I am sure that those women had definite obstruction at the bladder neck.

About that time the thing had proved to me that it was a bladder-neck obstruction, and the work of Frontz* in February, 1932, in a paper published in the *Journal of Urology* on "the significance of trigonal hypertrophy" proved definitely that when you slipped the cystoscope into the bladder and found hypertrophy of the trigone muscle that was positive proof of so-called median bar type of obstruction. That paper hit me right between the eyes, and immediately I knew that these patients had a definite obstruction. I did resection of these bars with complete relief to these patients.

At that time I thought this was an original observation, but I found later that Doctor Folsom of Dallas, Texas, had written a paper on the subject about a year before that.

It has also been proven that a few women have prostate glands. Doctor Young has brought that out, and, as Doctor Roberts has mentioned, there are definite glands at the bladder neck, periurethral, and submucous glands that hypertrophy, just as in the male, because these are the glands in the male that hypertrophy.

One point I would like to bring out especially is that when you examine the female urethra and observe the meatus, if you see small polyps, cysts, or caruncles, you can be almost positive that the patient has a chronic urethritis. So-called caruncles have been removed by surgeons and the patients were not relieved; they were simply evidence of a long-standing, chronic infection in the urethra, with underlying fibrosis.

I could talk almost indefinitely on this subject, but my time is up. I want to thank young Doctor Roberts for this paper, which, I think, all general practitioners should hear or read.

DR. GILBERT M. ROBERTS, JR. (closing): I wish to thank the discussers of this paper. I referred quite a bit to infection as the nature of this condition of which I have spoken, and, although I think some degree of infection is present in the majority of cases, I realize that clinically one is most often unable to prove this. The infection I am talking about is at the base of the glands about which I spoke. My reason for assuming that infection is present, although we cannot prove it, goes back to the work of Folsom, who collected numerous autopsies and cadaver specimens of the bladder neck and made serial sections of these and in quite a number of instances found that there was polymorphonuclear infiltration at the bases of these glands.

In another group of patients we frequently see alternating days of clear urine with that of a pyuria, while all of the time the urines of the upper urinary tract are free of pus. The bladder being clear all of the time, we again assume that the source of the pyuria is the glands present in the urethra.

I would like to repeat my thanks and appreciation to those who have discussed this paper.

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*Deceased.

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H. H. SHOULDERS, M.D., Editor and Secretary

MARCH, 1942

EDITORIAL

Disability Insurance and Hospitalization Payments

On another page of this issue of the Journal is an article under the above title. (Refer to index.)

This article appeared as an editorial in the *Journal of the American Medical Association.* It represents much more, however, than the opinion of the editor of the *Journal.* It is, in fact, an official expression which represents not only the opinion of the editor, but the hearty approval of the entire Board of Trustees of the American Medical Association.

It is suggested that every member of the Association read this article with care.

In previous editorials attention has been called to the fact that there are still in this country individuals and groups who show an inclination and a *determination* to take advantage of the emergency situation to foster some piece of pet social legislation.

Without regard to the merits or demerits of this particular piece of legislation, there are a few considerations which should bring about its rejection by a committee of the Congress and the Congress itself at an early date.

The first consideration is this: The United States is now engaged in what is commonly referred to as an "all-out war." To win this "all-out" war calls for all of the energies, brains, and efforts of all the people in dealing with the problems related directly to the war. Certainly it is not conducive to an all-out effort on the part of the people to have one department of the government preaching the doctrine of an all-out war and another agency preaching the doctrine of an all-out effort to accomplish a revolutionary change in our democratic way of life, as related to medical care.

Another consideration which should cause a committee of the Congress to reject this legislation is the fact that there are at the present time several prepayment plans in operation in several different states. In due time the operation of these plans in these various states will yield an experience on which to base broader legislation in the event such experience has demonstrated the value of such plans.

It seems perfectly foolish to destroy the value that would grow out of a variety of local experiments by enacting and putting into operation an all-inclusive federal plan without federal experience to guide the framing of such legislation.

As pointed out in the article referred to, this is no time to consider legislation with such far-reaching effects as that proposed.

We join others in crying out for united effort to accomplish a definite objective on which all agree, "the winning of the war" and for putting aside legislation of a controversial nature until victory has been won and proper consideration can be given new legislative proposals.

Certainly this is not a war measure. It seems appropriate, therefore, to suggest to the Congress that we, the people, would prefer that all the efforts of our congressmen and senators be directed to a consideration of measures and policies related to the major problem of the moment.

Enrollment With Procurement and Assignment Service

A letter from Major Sam F. Seeley, Executive Officer of the Procurement and Assignment Service, dated February 28, 1942, states that there has been unavoidable delay in the printing of the forms which the service had expected to use in the enrollment of doctors with the agency.

It is hoped that the forms will be available in the near future. He further states: "*In the meantime any physician desiring to enroll may do so by writing directly to this office.*"

Address communications to Major Sam F. Seeley, Executive Officer, Procurement and Assignment Service, 601 Pennsylvania Avenue, Washington, D. C.

DR. FRANK WHITACRE

The following letter from Mrs. Frank Whitacre to Mr. L. W. Kibler, Field Director, Committee on Postgraduate Instruction, is incorporated in this editorial in the belief that about fifteen hundred doctors in Tennessee are interested in the fortunes and misfortunes of Dr. and Mrs. Whitacre:

"1405 Drake Avenue
Burlingame, California
February 21, 1942

"Dear Mr. Kibler:

"I have just remembered that I left your letter unanswered and now cannot locate it. I am sorry, but I have been pretty much worried and have neglected some things that I should not have.

"Frank was on his way home, called me from Manila on December 2, and went to work there in the Sternberg, the military hospital, when war started. After that cablegrams came regularly until just before Manila was bombed, when I had one saying, 'Getting hot here.' There was one more on December 31, when the ironic message, 'Happy New Year,' was all that was allowed. Since then there has been only silence, which is hard to take.

"But for the children's sake, and because I know that Frank would want me to, I am keeping cheerful and hopeful. I know that wherever he is he is doing a lot of good work, and I am proud of him and the service he is giving, and know that everything will turn out all right. Will you please let the Tennessee doctors know, and give them all our best wishes.

"Sincerely yours,
(Signed) "LILLIAN WHITACRE."

Such information shows how close home the war is becoming. There apparently is no battle front in the form of trenches. The battle front, it seems, is wherever an enemy is found and engaged.

THE 1942 MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION

The 1942 meeting of the Tennessee State Medical Association takes place in Memphis, Tennessee, April 14, 15, 16.

The Peabody Hotel, Memphis, has been selected as headquarters.

Dr. E. G. Kelly is chairman of the local committee on arrangements.

A tentative incomplete program appears in this issue of the JOURNAL. A completed program will be mailed to each member about April 1.

Please mark your calendar in red ink for April 14, 15, 16.

BONDS OR BONDAGE

At the request of the Treasury Department an article under the above title appears in this issue of the JOURNAL. This was prepared by the Treasury Department, and the editor feels that the profession will heartily approve the policy of running such material.

The medical profession was one of the first groups in the United States to begin thinking on the subject of preparedness.

Members of the medical profession are serving in every capacity possible for a medical man to serve.

The medical profession will serve also in the capacity of buying bonds to the limit of their ability.

TENTATIVE PROGRAM

The following is an incomplete and tentative program It is published at this time to give indication that the program will be excellent

The program of the Tennessee State Pediatric Society is included

The Tennessee Academy of Ophthalmology and Otolaryngology submit their tentative program

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DISTINGUISHED GUEST SPEAKERS

Diagnosis and Treatment of Pulmonary Fungus Infection (Lantern Slides and Short Movie).
DR. ROBERT JAMES REEVES, Durham, North Carolina.

Nutrition and Defense.
DR. JAMES S. McLESTER, Birmingham, Alabama.

An Address.
DR. CARL M. PETERSON, Secretary, Council on Industrial Health, American Medical Association, Chicago, Illinois.

Ancient Processes in a Scientific Age—Feeding Aspects.
DR. C. ANDERSON ALDRICH, Chicago, Illinois.

An Address.
DR. FRED RANKIN, President-Elect, American Medical Association, Lexington, Kentucky.

An Address.
DR. EDGAR GREENE, Atlanta, Georgia.

EVENING PROGRAM
Tuesday, April 14, 1942
8:00 P.M.

Medicine in the Armed Forces of Our Country.
DR. HIRAM A. LAWS, JR., Chattanooga, President, Tennessee State Medical Association.

An Address.
DR. FRED RANKIN, Lexington, Kentucky, President-Elect, American Medical Association.

An Address.
DR. EDGAR GREENE, Atlanta, Georgia.

ESSAYS

1. **Carcinoma of the Lip with Special Reference to Regional Lymph Node Management.**
DR. HARWELL WILSON, Memphis
2. **Obstructive Lesions of the Left Colon.**
DR. R. L. SANDERS, Memphis.
3. **The Internist's Problem of Backache.**
DR. H. B. GOTTEN, Memphis.
4. **Treatment of Toxic Effects of the Sulfonamides.**
DR. I. G. DUNCAN, Memphis
5. **Abortions and Progesterone.**
DR. J. M. BROCKMAN, Memphis
6. **Treatment of Facial Fractures.**
DR. WM. MILTON ADAMS, Memphis
7. **Syphilis.**
DR. E. R. HALL, Memphis.
8. **Neurosurgery and the War.**
DR. COBB PILCHER, Nashville.
9. **Diet in Dermatological Conditions.**
DR. R. N. BUCHANAN, JR., Nashville.
10. **Abdominal Symptoms Not Due to Abdominal Disease.**
DR. W. H. WITT, Nashville.
11. **Intestinal Drainage—Uses and Abuses in Obstruction.**
DR. BARNEY BROOKS, Nashville.
12. **Carcinoma of the Lung.**
DR. HOLLIS E. JOHNSON and DR. ROLLIN A. DANIEL, JR., Nashville.
13. **Some Further Studies on the Subject of an Old Bladder Lesion (Trigonitis).**
DRS. HENRY L. DOUGLASS, CHARLES RANSOM, and B. H. WEBSTER, Nashville.
14. **Treatment of Burns by the Use of Triple Dye.**
DR. CHARLES S. TRABUE, Nashville.
15. **The Treatment of Compound Fractures under War Conditions.**
DR. E. DUNBAR NEWELL, Chattanooga
16. **Post-Partum Sterilization.**
DR. H. P. HEWITT and DR. E. T. McCALL, Chattanooga.
17. **Poliomyelitis.**
DR. M. LOU HEFLEY, Etowah.
18. **Special Ovarian Tumors; with a Report of Eighty-Four Cases.**
DR. CARROLL H. LONG, Johnson City
19. **Obscure Fevers.**
DR. DAN. R. THOMAS, Knoxville
20. **The Treatment of Fistula in Ano.**
DR. J. M. STOCKMAN, Knoxville.
21. **Present Concepts of Thoracoplasty in Tuberculous and Nontuberculous Disease.**
DR. DAVID H. WATERMAN, Knoxville.

THE TENNESSEE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President, DR. W. D. STINSON, Memphis
Vice-President, DR. J. W. WILKES, Columbia
Secretary, DR. S. H. SANDERS, Memphis

Abscess of the Lens.
DR. R. O. RYCHENER, Memphis.

A Case Report.
DR. WILLIAM A. GARROTT, Cleveland.

Blindness in Tennessee, Its Cause and Prevention.
DR. HALE E. CULLOM, Nashville.

Nasal Obstruction in Childhood.
DR. STEWART LAWWILL, Chattanooga

Fungus Infection of Mastoid.
DR. JOHN J. SHEA, Memphis.

TENNESSEE STATE PEDIATRIC SOCIETY

President, DR. JACK CHESNEY, Knoxville
Vice-President, DR. W. D. MIMS, Memphis
Secretary, DR. GILBERT ERLEN, Knoxville

PEABODY HOTEL

Morning Session
9:00 A.M.

Presidential Address.
DR. JACK CHESNEY, Knoxville

9:20-10:20 A.M.

Case Report—The Newborn.
DR. A. G. QUINN, Memphis.

Case Report Meningitis of Undetermined Origin.
DR KINSEY M BUCK, Memphis

Congenital Cystic Liver.
DR. TOM MITCHELL, Memphis.

Use of Sulfonamides in Treatment of G. C. Conjunctivitis.
DRS. G J. LEVY and P. M LEWIS, Memphis

10:20-10:30 A.M.

Ten-Minute Intermission.

10:30-11:30 A.M.

Case Report Value, if Any, of Vitamin E in Amyotonia.
DR. W. D. MIMS, Memphis.

Diarrhea in Children at John Gaston Hospital.
DR. A G JACOBS, Memphis.

Case Report Waterhouse-Friderichsen Syndrome.
DR. W. L. RUCKS, Memphis.

Encephalitis Secondary to Retropharyngeal Abscess.
DR H. J JACOBSON, Memphis.

11:30 A.M.-12:15 P.M.

Round-Table Discussion "Childhood Nephritis."
DR. C. A. ALDRICH, Chicago, Ilinois.

12:15 P.M.

Short Business Session.

12:30 P.M.

Luncheon.
Movie on "Otitis Media in Pediatrics."

Afternoon Session

2:00 or 2:30 P.M.

Ancient Processes in a Scientific Age Feeding Aspects.
DR. C. A ALDRICH, Chicago, Illinois.
(This paper is before the State Medical and Pediatric Societies.)

Ward Rounds John Gaston Hospital.
Conducted by DR TOM MITCHELL.

DEATHS

DR. JAS. R. NANKIVELL

Dr. Jas. R. Nankivell, Athens; New York University Medical College, New York City, 1878; aged eighty-eight; died February 6, 1942.

DR. W. H. ARRANTS

Dr. W. H. Arrants, Sweetwater; University of Nashville, Medical Department, 1910; aged sixty; died December 13, 1941.

DR. EDGAR H. FORD

Dr. Edgar H. Ford, Knoxville; Tennessee Medical College, Knoxville, 1903; aged sixty-two; died December 23, 1941, of cerebral hemorrhage.

DR. WILLIAM N. LYNN

Dr. William N. Lynn, Knoxville; Lincoln Memorial University, Medical Department, 1909; aged fifty-eight; died February 2, 1942.

DR. WILLIAM B. TURNER

Dr. William B. Turner, Knoxville; University of Cincinnati College of Medicine, 1924; aged forty-three; died January 9, 1942.

RESOLUTIONS

RESOLUTIONS AND TRIBUTE TO DR. JOE WRIGHT

On February 3, 1942, Giles County and the surrounding territory was shocked and saddened by the sudden and untimely death of Dr. Joe B. Wright of Lynnville, Tennessee.

Doctor Wright graduated from Vanderbilt University School of Medicine in 1912, after which he practiced medicine in Lynnville, Tennessee.

Whereas, the Supreme Physician has seen fit to remove from our midst and fellowship our brother physician and good friend, we, the members of the Giles County Medical Society, do hereby resolve that the death of Doctor Wright represents an irreparable loss to our community and to our profession.

Whereas, his sterling character, keen intellect, and genial disposition endeared him to all who knew him.

Whereas, he gave himself unselfishly and unstintingly to the service of his patients, rich and poor alike, until within a few hours of his death.

Now, therefore, we, the members of the Giles County Medical Society, with grieved hearts do deplore the passing of this, our beloved comrade, and do hereby express our personal and public loss in his death, requesting that these resolutions be spread upon the records of our society, and copies be sent to the county papers and to the JOURNAL OF THE TENNESSEE STATE MEDICAL

ASSOCIATION, and that a copy be sent to the son and daughter of the deceased as an expression of our deep sympathy in this time of sorrow.

(Signed) DR. J. K. BLACKBURN,
DR. T. F. BOOTH,
Committee on Resolutions, Giles County Medical Society.

DR. WILLIAM HUBERT ARRANTS

On December 13, 1941, the Monroe County Medical Society lost one of its most beloved members in the death of Dr. W. H. Arrants of Sweetwater.

Doctor Arrants was born in Meigs County, Tennessee, on November 18, 1881. He was graduated from the University of Nashville School of Medicine in 1910, and served an internship in St. Thomas Hospital of Nashville, Tennessee. He located in Sweetwater in 1911, where he practiced medicine until forced to retire because of illness about two years before his death.

Doctor Arrants loved his church, his home, his many friends, and patients, for whom he labored and toiled with an untiring devotion and an unyielding will. Doctor Arrants was honest, courageous, brave, and loyal. His unique personality has impressed itself indelibly upon the memory of all those who knew and loved him. Beneath a jovial exterior there lurked compassion and conscientious devotion for those to whom he gave a life of service. His was a life of complete unselfishness, and his undying loyalty to those of us who were his comrades will be ever cherished in our memories.

Be It Therefore Resolved, That we have lost a faithful comrade, the medical profession a capable and conscientious member, and the community a beloved citizen.

Be It Further Resolved, That we extend an expression of deepest sympathy to the wife and family.

And Be It Further Resolved, That a copy of these resolutions be spread on the minutes, a copy sent to the wife of the deceased, and a copy to the State Medical Association.

R. M. PRICE,
L. L. BARNES,
T. M. ROBERTS,
Committee.

DR. WILLIAM N. LYNN

Death has again entered the ranks of our Medical Society and has taken from us one of our number, Dr. William N. Lynn.

Doctor Lynn was born in Knoxville, Tennessee, and was fifty-eight years of age. He was graduated from the Medical Department of Lincoln Memorial University in 1909. In 1914, the University of Tennessee took over the Medical Department of Lincoln Memorial University. He served as intern in Lincoln Memorial Hospital from 1909 to 1910, then was superintendent of Lincoln Memorial Hospital from 1910 to 1912, after which he entered in general practice, which covered a period of thirty years.

He served as captain in the first World War and kept his connections with the military service and attained the rank of colonel in the Medical Reserve Corps.

He was a member of the active staffs of Knoxville General Hospital, Fort Sanders Hospital, and St. Marys Memorial Hospital. He was also a member of the American Medical Association, Tennessee State Medical Association, and Knox County Medical Society.

Doctor Lynn was an untiring worker. He would go to bed late at night and would be up at 6:00 A.M. ready for work again. His hobby was work, which he enjoyed. He spent very little time at home, yet he was devoted to his wife and daughter. He was kind and considerate of the welfare of his patients, and at all times gave to rich and poor alike the same careful attention. He will be missed, not only by his wife and family, but by a host of grateful patients, as well as his colleagues in the medical profession.

Be It Resolved, That a copy of these resolutions be sent the STATE MEDICAL JOURNAL, a copy be spread on the minutes of this society, and a copy sent his wife and daughter.

A. L. RULE,
JESSE C. HILL,
W. W. POTTER,
Committee.

MEMORIAM FOR DR. THOMAS AP R. JONES

Dr. Thomas Ap R. Jones, one of the veteran members of the Knox County Medical Society, died October 9, 1941, at the age of seventy-five. Doctor Jones was one of the old landmarks of the medical profession in Knoxville. He was one of its first city physicians. He worked hard to obtain a city hospital for Knoxville. He was an honorable man, good doctor, and an exceptionally good financier.

Be It Resolved, That this memoir be placed on the minute book in his respect because of his value to the medical profession.

JESSE C. HILL, M.D.,
R. B. WOOD, M.D.,
JOHN R. SMOOT, M.D.,
Committee.

MEMORIAM FOR DR. E. H. FORD

Dr. Edgar H. Ford, a member of the Knox County Medical Society, died December 23, 1941. Doctor Ford had been practicing medicine since 1903, and in Knoxville since 1910, specializing in ear, eye, nose, and throat. Doctor Ford loved his medical society, church, and home. He was a good doctor and a high-type Christian gentleman.

Be It Resolved, That the Knox County Medical Society put this memoir in the minute book and send a copy of same to his good family, also the TENNESSEE STATE JOURNAL.

JESSE C. HILL, M.D.,
R. B. WOOD, M.D.,
JOHN R. SMOOT, M.D.,
Committee.

MEMORIAL FOR DR. WILLIAM B. TURNER

Dr. William B. Turner died January 9, 1942. Doctor Turner was a member of the Knox County Medical Society for several years. He was health director for the Tennessee Valley Authority since coming to Knoxville. He was always a great believer in organized medicine and gave his full support to his local society. Doctor Turner was an honorable citizen, a good doctor, and a home-loving man. The Knox County Medical Society feels a great loss in his untimely death.

Be It Resolved, That the Knox County Medical Society with deep sincerity express sympathy to his good wife, and may the Great Physician bless her and comfort her. May a copy of this memorial be placed on the minutes, a copy sent to Mrs. Turner, and a copy for publication to the STATE JOURNAL.

JESSE C. HILL, M.D., *Chairman.*
TOM R. BARRY, M.D.
J. B. NAIVE, M. D.
Committee.

MEDICAL SOCIETIES

Carroll County:

The meeting of the Carroll County Medical Association was held Tuesday evening, February 10. The following officers were elected:

President—Dr. F. C. Carnell, Trezevant.

Vice-President—Dr. C. T. Cox, Westport.

Secretary and Treasurer—Dr. R. B. Wilson, Clarksburg.

Dr. L. E. Trevathan, Bruceton, was elected delegate to the State Convention. Dr. J. Mansfield Bailey of Camden was elected alternate delegate.

R. B. WILSON, M.D., *Secretary.*

Davidson County:

February 10—Dr. O. S. Hauk and his staff at the Central State Hospital entertained members of the society.

February 16—"The Curable Forms of Heart Disease," by Dr. J. Allen Kennedy. Discussion by Dr. David Strayhorn.

"Neck Abscesses of Dental Origin," by Dr. Guy H. Williams. Discussion by Dr. N. S. Shofner.

February 24 — "Precancerous Dermatoses," by Dr. Robert N. Buchanan. Discussion by Dr. E. E. Brown.

"Nutritional Problems in France," by Dr. John Youmans.

March 3—"The Problems of Hospital Care for Tubercular Patients," by Dr. W. W. Hubbard. Discussion by Dr. Hollis E. Johnson and Dr. R. R. Crowe.

"Tennessee Law to Prevent Spread of Venereal Disease Through Marriage," by Dr. W. C. Williams and Dr. C. B. Tucker.

March 10—Dr. Sam A. Cosgrove, Jersey City, N. J., addressed the society. The title of his paper was "Remarks on Heart Disease and Toxemia of Pregnancy."

A subscription dinner was given for Dr. Cosgrove at the Noel Hotel.

"Pituitary Hormones," a sound picture, by Parke, Davis & Company, was shown following the lecture of the evening.

Hamilton County:

February 5—"Surgical Disease of Thyroid," by Dr. Edward T. Newell, Jr.

Paper by Dr. H. H. Hampton.

February 12—"Rheumatic Fever," by Dr. Robert A. Wise.

"Endocrine Deficiencies in Children," by Dr. O. L. Von Canon.

February 19—"Sterility of Females," by Dr. H. P. Hewitt.

Paper by Dr. Paul R. Swanson.

February 26 — Abstracts: "Dr. Wm. Henry Welch, Medical Educator," by Dr. Franklin B. Bogart.

March 5—"Supracondylar Amputations in Peripheral Vascular Diseases," by Dr. D. B. Karr.

"Treatment of Diabetes Mellitus," by Dr. Phillip Livingston.

March 12—"Neurosurgical Problems of Army Medicine," by Dr. A. McCravey.

"Some Unusual Fractures" (lantern slides), by Dr. R. C. Robertson.

Knox County:

February 10—"The Tuberculosis Problem in Review and in Outlook," by Dr. J. B. Naive.

February 17—"Congenital Syphilis," by Dr. A. H. Lancaster. Discussion by Drs. Frank Faulkner and W. R. Cross.

February 24—"Sinusitis," by Dr. Henry Cunningham. Discussion by Drs. R. G. Reaves and E. E. Miller.

March 3—"Homeopathic Medicine," by Dr. W. A. Boies. Discussion by Dr. J. H. Keeling.

March 10—"Venereal Disease Program," by Dr. H. H. Hudson.

Madison County:

The Madison County Medical Society met in regular session on Tuesday, March 3, 1942, at 6:30 o'clock for dinner at the Southern Hotel in Jackson, Tennessee.

Program:

"Tumors of the Breast," by Dr. Frank Ward Smythe, Memphis.

"Disease of the Vagina and Cervix," by Dr. W. T. Black, Jr., Memphis.

The papers were discussed freely.

S. M. HERRON, M.D., *Secretary.*

OTHER MEDICAL SOCIETIES

The Second American Congress on Obstetrics and Gynecology will be held in St. Louis, April 6 to 10. Further information is available at the Central Office of the Congress at 650 Rush Street, Chicago.

The Fifth Institute on Postgraduate Psychiatric Education for State Hospitals, under the auspices of the American Psychiatric Association Committee on Psychiatry in Medical Education, will be held at the Missouri State Hospital, St. Joseph, Missouri, March 23 to April 4.

The program is intended for state hospital men and other physicians interested in psychiatry.

A copy of the schedule of lectures can be obtained from Dr. Franklin G. Ebaugh, Chairman, Colorado Psychopathic Hospital, Denver, Colorado.

The Mid-South Postgraduate Medical Assembly held its fifty-seventh annual session at the Hotel Peabody, Memphis, February 10-13, inclusive. It was organized in 1883 as the Tri-States Medical Association of Mississippi, Arkansas, and Tennessee, and with the exception of two years has met continuously each year since. One of the cancellations was caused by the great flood in 1937. The name was changed in 1931.

The usual high type of program which always marks the meeting as one of the outstanding medical gatherings of America was presented. Twenty-four speakers from various parts of the country, outstanding men in their several lines, were listed on the program. Over fifty technical and scientific exhibits were displayed, all approved by the American Medical Association. The registration, which was somewhat interfered with by the change in daylight time and conservation of tires, was 1,050.

The president for 1942 is Dr. Chas. H. Lutterloch, Hot Springs, Arkansas. The following officers were elected:

President-Elect — Dr. Jefferson C. Pennington, Nashville, Tennessee.

Vice-President—Dr. L. S. Nease, Newport, Tennessee.

Vice-President—Dr. John Archer, Greenville, Mississippi.

Vice-President—Dr. John A. Moore, El Dorado, Arkansas.

Secretary-Treasurer—Dr. A. F. Cooper (re-elected), Memphis, Tennessee.

IMPORTANT MEDICAL MEETING IN MARCH

The American Urological Association, Southeastern Section, will meet at the Patten Hotel in Chattanooga, March 19, 20, and 21.

This meeting is not only for urologists, but for all members of the medical profession.

One of its chief aims is to promote closer relationship between urology and other branches of medicine, general practice in particular.

In addition to able men in the Southeast, there will be addresses by Dr. Oswald S. Lowsley of New York, president of the American Urological Association; Dr. Robert Herbst of Chicago, past president; and Dr. Gordon McKim, eminent urologist of Cincinnati.

All physicians who are not members will be registered free of charge.

There will be worth-while entertainment afforded by the Hamilton County Medical Society, of which one of our own members, Dr. Madison G. Roberts, Sr., is president.

Our Tennessee State Medical Association president, Dr. Hiram A. Laws, Jr., is a prominent surgeon in Chattanooga and he extends an urgent invitation for you to attend.

ABSTRACTS OF CURRENT LITERATURE

INTERNAL MEDICINE

By R. B. Wood, M.D.
By D. R. Thomas, M.D.
Medical Arts Building, Knoxville

Some Immediate Causes of Cardiac Infarction. Ernest P. Boas. American Heart Journal, Vol. 23, No. 1, January, 1942.

The author calls attention to some of the events that may precede and precipitate a coronary occlusion, such as chest injuries from automobile accidents that reveal no outward marks of body injury.

The role of effort is discussed, the author believing there is a direct causal relationship, quoting Osler on the fatal effects of hurrying to catch a train and the equally dangerous effect of coitus. With symptoms occurring during or immediately after strenuous labor, the question of compensation naturally arises. "If the symptoms are immediately disabling, the causal connection is clear. If a lapse of days occurs between the accident and complete disablement, there must be a continuity of symptoms dating from the event." The accident is not to be considered compensable, however, unless it follows some unusual strain.

The effect of emotion is discussed and of its possible causation of death by producing ventricular fibrillation either through the outpouring of adrenalin or by anoxemia through vasoconstriction. He cites two cases of infarction following immediately an emotional disturbance.

The conclusions of various authors as regards the role of allergy in the production of electrocardiographic changes are given. He cites the occurrence of angina during serum sickness to be followed one week later by coronary occlusion and death with the autopsy showing coronary sclerosis. Pain of an anginal nature following desensitization injections are cited.

The drinking of ice water may cause an inversion of the T waves in leads II and III. Luten has described two cases of infarction occurring at this time due probably to chilling of the heart muscle. Cold and exertion is often a cause of pain and sometimes death follows.

Infectious diseases, operations, shock, large meals may precipitate attacks, but none of these factors enumerated cannot cause infarction in the presence of normal coronary arteries.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Hysterectomy in Pregnancy, Labor, and Puerperium. Gerald W. Gustafson, M.D., F.A.C.S. American Journal of Obstetrics and Gynecology, February, 1942, pp. 221, 230.

There is a small but definite place in the field of obstetrics for hysterectomy. Probably no other operation so clearly demonstrated the justification for unity in obstetrics and gynecology. This paper is an attempt to correlate the indications for hysterectomy in pregnancy, labor, and the puerperium, and is based on those hysterectomies done on obstetric service of the William H. Coleman Hospital and the personal experience of the author. From the opening of the Coleman Hospital in October, 1927, to January 1, 1941, there have been 12,536 deliveries, including all births of babies of 1,000 grams or more. During this period there have been twenty-seven abdominal hysterectomies definitely associated with the parturient state. A review has been made of the twenty-seven hysterectomies associated with pregnancy, labor, and the puerperium at the Coleman Hospital during the time interval embracing 12,536 deliveries. This operation may be the most conservative obstetric operation in certain situations. In this series there was no maternal mortality. Early diagnosis, hysterectomy, and radiation is our hope of lowering mortality from chorionepithelioma. In many cases hysterectomy is preferable to hysterotomy for interruption of pregnancy and sterilization. In degenerated fibroids and fibroids blocking the birth canal, Caesarean section at term followed by hysterectomy is the safest procedure, myomectomy being reserved for pedunculated or easily accessible suberous fibroids. In complete rupture of the uterus early hysterectomy and transfusions are lifesaving. Severe abruptio placentae occasionally demands section plus hysterectomy, but not until conservative management has failed. Placenta accreta, when present to any extent, is an indication for hysterectomy. The author considers Caesarean section plus hysterectomy the safest abdominal procedure in the infected candidate for Caesarean. Thorough intrauterine examination is advocated at the time of Caesarean section for evidence of submucous fibroid abnormal placental implantation or unsuspected injury to the uterus.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Carbaminoylcholine (Doryl) in the Therapy of Glaucoma. Alessandro Aliquo-Mazzei. American Journal of Ophthalmology, February, 1942.

The author presents his study of the miotic and hypotensive action of carbaminoylcholine as prepared for ophthalmic use in aqueous solution under the name of doryl. Twenty-six persons with glaucoma were studied, some with chronic simple glaucoma, others with congestive glaucoma, and a few with secondary glaucoma. The diminution in tension was marked in primary glaucoma except in one or two cases in a most advanced stage; on the other hand, it was negligible in secondary glaucoma. In acute glaucoma the use of doryl relieved pain, favored the reabsorption of corneal edema, and often resulted in a lowering of the tension to a notable degree. It did not always cut short the attack, but frequently lowered the tension to a point where surgical intervention was much facilitated. The best results were obtained in chronic simple glaucoma. The hypotensive action of the drug was observed to be not in direct ratio to the miosis. The former lagged behind the latter, and was of greater duration. Sometimes the hypotensive effect was marked where the miosis was slight. The author concludes that the hypotensive effect of doryl and other miotics is due chiefly to vasomotor changes, particularly in the capillary permeability. Hence, the mechanism of the action of doryl squares perfectly with the neurovegetative theory of glaucoma. No intolerance for doryl was found. The article is prefaced by a brief discussion of the theory of glaucoma, and studies made by others on the action of doryl and similar drugs are summarized.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Cobra Venom in the Relief of Pain Due to Cancer. P. J. Hodes and R. S. Thorner. American Journal of Roentgenological and Radiological Therapy, Vol. 45: No. 6, p. 866, June, 1941.

Cobra venom has recently been used to control pain caused by cancer. It was selected for trial because it was rich in neurotoxins. It also contains albumen, pseudoglobulin, and a glucoside belonging to the saponin group. In the dried form, it may be preserved for years. The exact mode of action in relieving pain is unknown, but the work of Macht suggests that it acts on the subcortical brain centers, the action being similar to morphine, but occurring much more slowly.

The drug is supplied in ampules of one cubic centimeter containing ten mouse units, equivalent to one-tenth milligram of the dried venom. Usually five-tenths cubic centimeter is given intramuscularly at the first dose. If no untoward symptoms, such as abdominal cramps or diarrhea, develop, one cubic centimeter is given on the second day. Usually there is some increase in pain for the first few days, but this is no contraindication to continuation of the drug. It is given daily in doses of one to 1.5 cubic centimeters until the pain is relieved. In the experience of the authors this occurs about the fifth dose. When relief of pain is obtained, the interval is lengthened until the maintenance dose is determined.

The untoward symptoms may be abdominal cramps, diarrhea, local inflammation at the site of injection. In no case did the authors find it necessary to discontinue the drug. In instances where considerably larger doses were used by other workers, mental confusion and epistaxis have been reported.

Little is known concerning the contraindications to the use of venom. The authors have never refused to give the venom to anyone suffering from severe and constant pain. Some have refused to give the venom to those having severe liver or kidney involvement or to those suffering from severe psychic disturbances.

SUMMARY

Cobra venom has been used successfully in fifty to seventy per cent of the patients, in whom it has been injected for the relief of pain. While it is too early to assign cobra venom to a permanent place as an analgesic agent, the evidence suggests that it may prove to be of considerable value in the treatment of intractable pain.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

Pyelitis in Children. J. P. Richardson. Journal of Urology, Western Section, Vol. 10, 1941.

Children are subject to the same urological infections as adults and should receive the same thorough general physical examination, including the search for foci of infections and urological examination.

When infections reach the kidney by the blood stream, the first lesions are found in the cortex and medulla. If the infections are ascending, the pelvis is first involved, followed by extension into the parenchyma. The condition is practically always a pyelonephritis and not a simple pyelitis.

Congenital abnormalities are very common in children with recurring renal infection.

The colon bacillus is the most common organism found in these infections.

The acute onset begins with an intestinal upset, elevation of temperature, chills, vomiting, frequency of urination, dysuria, pain and tenderness over the involved kidney, pus in the urine, and an elevated leucocyte count of the blood. Pyelitis must be distinguished from intestinal toxemia, acute general infectious diseases, and acute abdominal conditions.

The treatment consists of correcting the structural abnormalities and establishing adequate drainage, the relief of foci of infection, and chemotherapy. The drugs most effective are mandelic acid preparations and the sulfonamide drugs. Of the latter, sulfathiazole seems to be the drug of choice in the majority of cases. The dosage is from three-fourths to one grain per pound of body weight per twenty-four hours. Careful watch should be noted for toxic effects of the drug.

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Committee on Foods

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President-Elect—Dr. J. B. Stanford, 899 Madison Ave., Memphis.
Vice-President for West Tennessee—Dr. Glenn D. Batten, Jackson.
Vice-President for Middle Tennessee—Dr. John S. Freeman, Springfield.
Vice-President for East Tennessee—Dr. C. W. Friberg, Johnson City.
Secretary-Editor—Dr. H. H. Shoulders.
Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville (1943).
Dr. J. B. Stanford, 899 Madison Avenue, Memphis (1942).
Dr. E. R. Zemp, Walnut Street, Knoxville.
Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga (1944).
Dr. L. W. Edwards, Nashville.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
Second District—Dr. S. R. Miller, Knoxville.
Third District—Dr. A. M. Patterson, Chattanooga.
Fourth District—Dr. J. T. Moore, Algood.
Fifth District—Dr. V. S. Campbell, Murfreesboro.
Sixth District—Dr. H. S. Shoulders, Nashville.
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Eighth District—Dr. Geo. W. Brasher, Jackson.
Ninth District—Dr. E. H. Baird, Dyersburg.
Tenth District—Dr. W. B. Burns, Memphis.
Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—
Dr. E. G. Wood, Knoxville; East Tennessee (1942).
Dr. H. B. Everett, Memphis; West Tennessee (1943).

Alternates—
Dr. E. T. Newell, Chattanooga; East Tennessee (1942).
Dr. E. C. Ellett, Memphis; West Tennessee (1943).

OFFICERS OF COUNTY MEDICAL SOCIETIES

County	President	Vice-President	Secretary
Anderson-Campbell			U. S. Carden, La Follette
Bedford	W. H. Avery, Shelbyville	M. L. Connell, Wartrace	J. N. Burch, Shelbyville
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Dyer, Lake, & Crockett			J. Paul Baird, Dyersburg
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Fentress	I. R. Storie, Jamestown	C. A. Collins, Wilder	J. Peery Sloan, Jamestown
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PRESENT-DAY MANAGEMENT OF PNEUMONIA*

CHARLES P. WOFFORD, M.D., Johnson City

If the patient with lobar pneumonia entering a hospital tonight were in a condition and knew enough of the facts to reflect on his prospects for a speedy recovery, he would be all smiles. His family no longer needs to dread the days of waiting, the uncertainty until the crisis comes, and then the often protracted convalescence. In the near future we may expect to see even an apathy on the part of his kin when they are told that he has only pneumonia. This is not news to any of us nor to any group of physicians in our country today. The miracle of the sulfonamides, conceived and produced by the research chemists here and abroad in the last seven years, is already stale news. But it is the result of efforts which are continuing at an increasing pace. New combinations of the sulfonamides are continually being synthesized and investigated, and we can expect these efforts to end only when the ideal compound has been formed.

What should be expected of this ideal drug? Finland and his coworkers[1] summarized some of these points when they said that the selection of the sulfonamide to be used depends on its effectiveness against not only the bacteria isolated from the sputum, but also the largest number of bacteria potentially present in the lungs, and its relative lack of toxicity. To date the drug that most nearly approaches this ideal is one that has not yet been put on the market—sulfapyrazine. In a small experimental group of patients with lobar pneumonia, Rueggsegger and his associates[2] found the drug to be 100 per cent effective. Of course, this lack of mortality in a group of only thirty-two patients must be discounted. Among toxic symptoms there were no instances of nausea or vomiting, no skin rashes, no blood or urine changes of note, and only some hallucinations and delusions in two patients. In larger series we can expect to get a truer perspective of the advantages and disadvantages of this latest member of the sulfonamide family.

The drugs at hand, however, are the ones with which we are most concerned, namely, sulfadiazine, sulfathiazole, sulfapyridine, and sulfanilamide. Let us consider these from the standpoints of their dosage, absorbability, effectiveness, and their toxic reactions. The first two points can be considered together. As to the initial dose of any one of them, it is about the same, but there is a variation of opinion, some preferring three grams, some four, and some five. Some men even give two grams as the initial dose, followed in two hours by a similar dose.

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*Read before the Washington-Carter-Unicoi County Medical Society, Johnson City, February 5, 1942.

In a series of 100 patients treated with sulfadiazine,[3] the initial dose was three grams, followed by one gram every four hours, whereas, in a similar group of patients treated with sulfathiazole, the initial dose of three grams was repeated in four hours, and thereafter the patients received one gram every four hours. It has been found,[4] however, that the size of the initial dose of sulfadiazine has no effect on the interval between institution of treatment and the critical fall of temperature. The maximum blood concentration of sulfadiazine following oral administration occurs in four to six hours, and higher levels can be maintained with one gram of this drug every six hours than with one gram every four hours of sulfathiazole, sulfapyridine, or sulfanilamide.[5, 6]

It has been shown that only a small part of the ingested sulfadiazine is changed to the inactive or conjugated form in the blood and that the proportion of conjugated to nonconjugated drug does not tend to increase with the further administration as it does with the other three drugs.[5, 6]

One might assume that a review of the literature would show an increasing effectiveness of each new member of this chemical quartet over its immediate predecessor in the treatment of pneumonia. Such is not the case. Reports from different centers vary. In one series the mortality rate of patients treated with sulfapyridine was as low as 2.7 per cent,[15] while in a group in another hospital similarly treated it was 11.4 per cent.[12] With sulfathiazole as the drug exhibited, the mortality figures vary accordingly from hospital to hospital. The rates with sulfadiazine seem to be more consistent in the different series so far reported, varying between 6.3 per cent and 7.8 per cent.[3, 4, 6] The actual effectiveness of these drugs in lowering the mortality rate cannot be judged by comparing a group of cases in Philadelphia with one in Chicago or Boston or New York unless the patients as well as the hospitals are comparable. In the large city hospitals many pneumonia patients arrive in a moribund condition. The mortality rates will naturally be higher than in some private institutions. Controlled series in the larger hospitals, however, show that sulfadiazine is equally or slightly more effective than sulfathiazole and that the latter is equally as efficient as sulfapyridine.

The rapidity of the critical fall in temperature has been shown[3] to be greater with sulfadiazine than with sulfathiazole, 87.6 per cent of the patients treated with the former drug showing a sustained drop within forty-eight hours compared with 74.7 per cent of the patients treated with the latter. Another study[6] showed that seventy-five per cent of patients treated with sulfadiazine were afebrile in thirty-six hours. Here, too, figures can be misleading, for another group, treated with sulfathiazole by the same men[7] who reported a 74.7 per cent drop in forty-eight hours, showed an 88.8 per cent drop in the same period of time.

The selection of the proper sulfonamide, however, is not dependent solely nor in large part on the relative efficiency, for any one of the three drugs is adequate from this standpoint. Sulfanilamide, of course, is no longer used in this connection. The real choice depends on their relative toxicities.

With the early use of sulfanilamide and sulfapyridine, we were so accustomed to see the symptoms of nausea and vomiting manifested that it was a joy to prescribe sulfathiazole, which produces these same symptoms about one-third to one-fourth as frequently.[7, 11] It was even more gratifying when we learned the propensities of sulfadiazine on this score, for it has been our experience and the experience of men reporting from the larger medical centers[1, 3, 4, 5, 6] that nausea and vomiting are mild and of infrequent occurrence when this latest sulfonamide is used.[3, 14] These symptoms, when present, are troublesome, but rarely serious.

The urinary toxic manifestations, on the other hand, can be extremely hazardous to the patient's safety. Hematuria was seen in about ten per cent of the sulfapyridine-treated cases[7] and in from five to ten per cent of those receiving sulfathiazole.[3, 7, 8] With sulfadiazine it occurs in less than one per cent.[6] Oliguria, anuria, and the presence of crystals of the acetylated compound in the urine also occur rarely when sulfadiazine is used. This apparently is due to the fact that acetyl-sulfadiazine in the urine is much more soluble than the crystals of sulfathiazole or sulfapyridine,[6] and also because there is less formation of acetyl-sulfadiazine.[6] Sulfapyridine crystalline masses occur most frequently in the renal pelves and in the ureters.[13] Sulfathiazole causes the most serious complications of the three because its crystals are not readily reabsorbed from the kidney tubules and, accordingly, frequently from concretions, completely blocking the tubules.[13] It has been shown that there is approximately a fifty per cent reduction in crystalluria with all the drugs when sodium bicarbonate is administered.[14] These urinary complications are further reduced when enough fluid is given to maintain a urinary output of at least 1,200 cubic centimeters daily.[1, 14]

Some of the other toxic manifestations are more serious, such as acute leukopenia, agranulocytosis, hemolytic anemia, and liver damage, but fortunately they are of rare occurrence with sulfathiazole and even rarer with sulfadiazine.[6, 7, 8, 10] Others are of less seriousness. Morbilliform, maculopapular, and nodular erythemas are seen in more cases where sulfathiazole is used than with any of the other drugs, but these rashes disappear promptly when medication is stopped.[7] With sulfadiazine we can expect to see a larger percentage of transitory psychoses. An incidence of as high as seven per cent has been reported.[3] As if to offset this unpleasant reaction, it is not uncommon for the patient receiving sulfadiazine to experience a sense of definite improvement just prior to or during the critical fall in temperature.[5] Drug fever can occur with any of the three drugs. Where the choice between the sulfonamide seemed a little in doubt when considered from the standpoint of effectiveness, there is no question but that sulfadiazine heads the list because of its relative lack of toxic reactions.

Certain precautions must be maintained in using these sulfonamides. Preliminary blood and urine studies must be done. Where a definite leukopenia exists prior to the institution of treatment and in the face of a severe infection, chemotherapy does not necessarily have to be withheld, for often improvement in the disease will be reflected in a rising white count, but this type of patient should be watched very carefully.[10] Chemotherapy should be instituted with a great deal of caution if renal disease exists with nitrogen retention or if there is hepatic disease or a history of previous sensitivity to any of the sulfonamides.

With any patient laboratory studies and a careful clinical check must be made frequently to detect signs of toxicity in their incipiency. Appropriate measures can then be taken before definite damage is done. Among other precautions it must be remembered that certain strains of pneumococci are resistant to this particular type of chemotherapy.[9] When such drug fastness occurs, nothing will be gained by changing to another form of sulfonamide.

The role of serum in the treatment of pneumonia is becoming of less and less importance with the advent of newer sulfonamide compounds, but it is far from relegated to the discard. Its actual value is difficult to determine. It seems, however, that its use is limited to the very old patients, the extremely toxic ones, those who have failed to show satisfactory response in thirty-six to forty-eight hours, and to those individuals who have shown a previous sensitivity to the sulfonamides.

Not to be forgotten in our enthusiasm for chemotherapy are the many symptomatic and supportive measures which make the difference between treating the patient with his disease and treating the disease alone.

CONCLUSIONS

We have summarized briefly the present-day management of pneumonia, including the various adjuncts to chemotherapy. We have surveyed the advantages and disadvantages of sulfanilamide, sulfapyridine, sulfathiazole, and sulfadiazine in the treatment of pneumonia and have found that sulfadiazine is the drug of choice today. What that drug will be next month or next year we cannot tell, but we can rest assured that the laboratories will continue in their efforts to give us a drug as near the ideal as possible.

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THE CONDUCT OF NORMAL LABOR AND THE ROUTINE EMPLOYMENT OF EPISIOTOMY AND PROPHYLACTIC LOW FORCEPS IN PRIMIPARA*

RODERICK C. WEBB, M.D., Bemis

Introduction

My remarks concern themselves with the normal labor of a normal, intelligent patient, who has had adequate prenatal care, and who has been found to have no systemic disease, no fetal nor pelvic disproportion, and no evidence of any abnormal position or presentation.

Conduct of the First Stage

No doubt it will be at two o'clock in the cold, black morning when the phone by the side of your bed rings, and you are informed by a hysterical husband that his dear wife has fallen into that most unenviable condition, labor. Following this, you grumble to said husband that you will be right over, slam the receiver down, mutter something about the patient being rather close kin to the canine family, drink a cup of black coffee, pull on your pants, jump in your car, and burst in the patient's front door, all in the same breath. Having arrived thusly, it is most necessary that you comment upon the weather, and shake hands with all the relatives present, especially the patient's mother-in-law. You now turn to the patient and ask her, in a casual manner, "Are you having any pains?" to which she will reply, "Of course, you fool; why do you think I called you?"

Becoming serious, ask the patient routine questions regarding the onset, character, and duration of her pains, whether her "waters have broken," etc. Next, check her blood pressure, palpate the abdomen for position and presentation, listen to the location, rate, and quality of the fetal heart, and, last, but by no means least, insert the index finger gently up the rectum so as to determine the state of the cervix and descent of the presenting part. Having satisfied yourself that the patient is in active labor, you send her into the hospital.

After being put to bed, the patient should have her perineum shaved and should receive a copious hot soapsuds enema for two reasons: (1) to stimulate uterine contractions and (2) to cleanse the lower bowel, thereby lessening chance for contamination at the time of delivery.

When convenient, I think that two milligrams of "Vitamin K" by mouth should be given to the patient as a routine measure. "Vitamin K" was first discovered in Sweden in 1935 by DAM. (I am not swearing—DAM is the bird's name.) It is well known that the newborn infant exhibits an increased tendency to bleed; "Vitamin K" raises the prothrombin level and accelerates the clotting time of the blood. Hellman, Shettles, and Eastman of Baltimore ran a small series of cases investigating the effects of "Vitamin K" on infant mortality; 384 mothers received two milligrams of "Vitamin K" during labor, while a control series of 392 received no "Vitamin K." In the "Vitamin K" series there were six deaths, or a mortality of 1.5 per cent, while in the control series there were sixteen deaths, or a mortality of 4.1 per cent. Alfred C. Beck of Brooklyn, in a large series of over 2,000 cases, found that in the infants whose mothers received "Vitamin K" only five-tenths per cent showed a bleeding tendency, while in the control series two per cent showed a bleeding tendency. So, in his cases, the use of "Vitamin K" during labor reduced the incidence of hemorrhage in the newborn infant approximately seventy-five per cent. Numerous other investigators have drawn similar conclusions, and, for this reason, I think that "Vitamin K" should be given to patients in labor as a routine procedure.

At this point I would like to mention a new drug that has recently been brought to the attention of the obstetrician; this new drug is "syntropan" (S-Y-N-T-R-O-P-A-N, "syntropan"), a nonnarcotic, antispasmodic which has been shown by John E. Stoll to materially shorten the duration of labor. It has been demonstrated to have a definite antispasdomic action on spastic smooth muscle, due jointly to (1) inhibition of the parasympathetic innervation and (2) to a direct relaxing action on the smooth muscle cell. Although the exact mode of action of "syntropan" in labor must await further investigation, its relaxing effect on the uterine cervix would seem to be rationale for its efficacy in hastening cervical dilatation, thus shortening the duration of labor. Stoll ran a small series of cases in which 102 mothers were given 100 milligrams of "syntropan" early in labor and a somewhat smaller control series in which the mothers received no "syntropan." In the primiparas receiving "syntropan" the first stage of labor averaged nine hours and nine minutes; in those with no "syntropan" the first stage averaged nineteen hours and ten minutes; in those primiparas having "syntropan" the second stage averaged one hour and two minutes; in those with no "syntropan," three hours and thirty-five minutes; in the multiparas a similar and just as striking decrease in the duration of the first and second stages was noted in those receiving "syntropan." Furthermore, David S. Hills, in a series of 600 cases at the Cook County Hospital, Chicago, found the length of labor with "syntropan" shorter than without "syntropan." Although, as yet, this drug is not recommended to be used routinely, it will be interesting to note the results of further investigation regarding it—to say the least, "maybe they have got something there." Personally, I have been employing "syntropan" in a few cases, and have noticed some encouraging results.

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*Read before the Madison County Medical Society, Jackson, December 2, 1941.

Coming back to the patient, she has been admitted to the hospital, has been prepped, given an enema, has swallowed two milligrams of "Vitamin K," and either has or has not had 100 milligrams of "syntropan." It is now wise to repeat the rectal examination, since considerable progress may have been made during the time consumed by the above procedures. At this point, I would like to mention pelvic examinations, and condemn their use in following the progress of a normal labor. In the first place, a properly-done rectal examination gives you just as much information about the progress of labor as does a pelvic examination; in the second place, a pelvic examination, unless done under strict operating-room technique, tremendously increases the dangers of post-partum sepsis. So, do not do pelvic examinations on patients whose labor is progressing normally; they should be done only for the following reasons: (1) if you suspect a placenta previa, (2) if the patient is bleeding an abnormal amount, and (3) if marked dystocia is present, and the cause of this dystocia is not apparent. If a pelvic examination is indicated, then both the doctor and the patient should be scrubbed and prepared as if for delivery.

Now comes the all-important question of obstetric analgesia and amnesia. I do not think it out of place to present a brief sketch of the development of analgesia. In 1902 Von Steinbuchel used morphine and scopolamine in obstetrics, and in 1907 Gauss developed a dosage and means of administration and called it "twilight sleep." During the next nine years it was used extensively, but too many infants were lost due to asphyxia, and, as a result, the method fell into disrepute. In 1915 nitrous oxide was recommended by Lynch, Webster, and Davis. Gwathmey introduced his so-called synergistic colonic anesthesia in 1921. In 1928 barbituric acid derivatives began their rapid growth as analgesic agents. In 1933 Rosenfield and Davidoff first introduced paraldehyde in obstetrics.

Analgesia and amnesia are worthy objectives in obstetrics provided the agents used are safe and do not lead to uterine inertia and unwarranted interference. In passing, I will mention several of the present-day methods used by well-known obstetricians. Arthur H. Bill of Cleveland administers morphine grains one-sixth and scopolamine grains 1/150 as soon as pains seem to hurt with no regard for the amount of cervical dilatation; he repeats scopolamine grains 1/200 after forty-five minutes, scopolamine grains 1/400 after another forty-five minutes, and every one and one-half hours thereafter until about three hours before the expected time of delivery. Walter A. Ruch of Memphis, in a series of 755 cases, gave 1/32 grain of dilaudid and 1/320 grain scopolamine subcutaneously when the cervix was three and one-half to four centimeters dilated in primiparas and two and one-half centimeters in multiparas; forty-five minutes later he gave 1/320 grain of scopolamine; forty-five minutes later 1/260 grain of scopolamine, repeated again in forty-five minutes and thereafter every one or two hours. By this method, according to Ruch, the mother was provided with pleasant analgesia, with little if any effect on the baby. Donald G. Tollefson of Los Angeles studied the effects of nembutal and scopolamine in 500 cases. His technique was as follows: as soon as the patient was definitely in labor and complained of pain, six grains of nembutal and 1/100 grain of scopolamine were given; additional amounts of nembutal in one and one-half grain doses and 1/300 grain of scopolamine were frequently added. Out of the 500 patients receiving this routine, forty-nine were extremely irrational and had to be controlled by either morphine or paraldehyde; the first stage was prolonged when the analgesic agents were given too soon. The length of the second stage was not analyzed because of the frequency with which termination by episiotomy and low forceps was employed. As to the effect on the infant, there was slight asphyxia at birth in fifty-five, moderately severe asphyxia in twenty-seven, and alarming asphyxia in twenty-seven infants.

"There is a time and place for everything." This saying still holds, and is especially applicable in obtaining safe and successful analgesia and amnesia in obstetrics. Therefore, each case should be individualized on the basis of (1) parity, (2) degree of dilatation of the cervix, (3) frequency and duration of the pains, and (4) whether or not the membranes have ruptured. These factors must be taken into consideration because if any agent or combination of agents is given too early in labor, the process will be definitely slowed up. There are certain requirements of satisfactory analgesia and amnesia; these are as follows: (1) concerning the mother, there should be safety, a minimum of uterine inertia, preservation of the reflex repulsive efforts, a minimum of excitement, and no tendency to post-partum hemorrhage; (2) concerning the baby, there should be safety and a minimum of interference with the establishment of respiration at birth; (3) concerning the method, it should be simple, adapted to home as well as to hospital use, rapid in action, prolonged in effect, and possess a wide margin of safety between the therapeutic and toxic dose.

If an agent can be found which will produce good amnesia, analgesia need not be perfect as long as the patient retains no memory of her suffering, for, to her, the labor has been painless. There is one drug, which, to my mind, satisfies this and the above requirement, and this drug is paraldehyde. Paraldehyde, unfortunately, has a somewhat disagreeable taste and odor, but, aside from this, I see no other serious drawbacks. As mentioned earlier in this paper, paraldehyde was first introduced into obstetrics by Rosenfield and Davidoff. In their series of fifty cases, they used paraldehyde in combination with nembutal or sodium amytal and obtained complete amnesia in ninety-four per cent and partial amnesia in six per cent; incidentally, eighty-eight per cent of their cases were delivered by prophylactic low forceps. Colvin and Bartholomew of Atlanta, in a series of 100 cases, used paraldehyde and sodium amytal and obtained complete amnesia in eighty-two per cent and partial amnesia in sixteen per cent—there were two per cent failures. Irving, likewise, ran 100 cases, but used nembutal in combination with scopolamine; he obtained eighty-six per cent with complete amnesia and fourteen per cent with partial amnesia; but a word of warning here—there was fetal apnea in thirty-seven per cent of his infants. So it seems that scopolamine, used either with morphine or nembutal, greatly increases the incidence of asphyxia neonatorum; perhaps if Irving had used paraldehyde in place of scopolamine, his percentage of fetal apnea would not have been so high. But even nembutal has its dangers; this drug is, in itself, primarily a hypnotic, and neither a good analgesic nor a good amnestic agent; when used in combination with certain other drugs, it does assume some analgesic properties, but it does, almost invariably, depress the fetal respirations, and, in some instances, is responsible for serious asphyxia neonatorum.

Coming back to paraldehyde, how should

it be given? It is most commonly given by rectum, but this method has certain disadvantages which are: (1) the difficulty of placing the drug above the presenting part; (2) the tendency of the patient to expel the preparation; (3) the comparatively slow absorption time; and (4) the inadvisability of doing rectal examinations following medication. The only real drawback of the oral administration is due to the odor of paraldehyde, which, confidentially, stinks, but, when mixed with equal parts of aromatic elixir, much of the odor is disguised. When should it be given? It is best to wait (1) until there are regular contractions lasting forty seconds or more; (2) until the cervix is dilated at least three centimeters in multiparas and four to five centimeters in primiparas; and (3) until the presenting part is fairly well into the pelvis. These criteria being filled, six drams of paraldehyde are given by mouth mixed with six grams of aromatic elixir, both drugs being previously cooled in an ice chest; if both nostrils are plugged with cotton, only a few patients complain much about this dose being obnoxious. This single dose is usually sufficient to carry a patient through her labor, but, at times, the dose may be repeated, using four drams of paraldehyde. As a rule, I use no other agents; however, on rare occasions, nembutal may be supplemented, usually only one and one-half grains, and never more than three grains, due to its depressing effect on fetal respirations. When sideboards are placed on the bed, no special nursing care is necessary; if these cannot be obtained, it is wise to have a member of the family in the room so the patient will not fall out of the bed. Undue restlessness is rarely present, and restraint is very seldom necessary. Rosenfield and Davidoff reported eight per cent restlessness; Colvin and Bartholomew reported two per cent excitement and four per cent restlessness; Louis H. Douglass found only a few cases of restlessness and never actual delirium. Using small doses of nembutal in combination with paraldehyde, Douglass, in a small series of fifty cases, obtained complete amnesia in ninety-four per cent of his patients; while in a later series of 300 cases, he obtained complete amnesia in 93.4 per cent of his cases. Of the 302 births from this series, twenty-six of the infants required only moderate resuscitation; there were no deaths from paraldehyde. Finally, paraldehyde can be used intravenously. In a recent article, Gardner and Sage of Omaha gave to 100 patients in labor one cubic centimeter of a ten per cent aqueous solution of paraldehyde per kilogram of body weight. They noticed no ill effects upon mother or infant, and recommend its use under circumstances in which rapidly effective analgesia and amnesia, of brief duration, are indicated.

So, in reviewing all of the above material, I think that paraldehyde is today the safest drug to use in obtaining first-class obstetric analgesia and amnesia.

At this point, a vicious, hydrocephalic monster raises its ugly head; this monster is spelled P-I-T-U-I-T-R-I-N, pituitrin. I mention this drug only to condemn its use in the first and second stages of normal labor. There are countless general practitioners today who are giving shots of pituitrin to the mother to accentuate pains and hasten delivery. When labor starts, the uterine muscle is highly sensitive to the action of this drug. When a baby is driven through the birth canal so rapidly that it has no chance to accommodate itself to the various diameters of the pelvis, tears of the falx cerebri and tentorium of the cerebellum are bound to occur. Furthermore, tetanic contractions of the uterus interfere with placental circulation and with the blood supply of the uterus, resulting in fetal asphyxia and damaging uterine musculature. There is also danger of deep cervical and perineal lacerations, injuries to the birth canal, premature separation of the placenta, post-partum hemorrhage, shock, collapse, and, finally, the most dangerous risk of all, rupture of the uterus. Solutions of posterior pituitary extract should be used only in cases of true primary inertia. These are the cases in which there seems to be actual weakness of the contractile muscle or of the uteromusculonervous mechanism. It should not be used when inertia is due to the following mechanical causes: (1) generally contracted pelvis; (2) abnormal position of the uterus; (3) abnormal position of the fetus; (4) tumors of the uterus or birth canal; and (5) congenital anomalies. In the words of Joseph B. De Lee, "Posterior pituitary extracts have no use in normal labor. If a woman takes nine months producing a baby, I do not think she could spend her time in any better way than in devoting a few hours delivering it."

Conduct of the Second Stage

According to De Lee, in the United States, about 20,000 women and more than 100,000 babies lose their lives yearly as the result of childbirth. Approximately one-half of the gynecological operations are necessitated by the damage which results from labor. Nowhere in nature do we find a so-called normal process which is associated with such a frightful number of deaths with as much trauma and as much permanent pelvic damage as results from childbirth. For this reason, we cannot truthfully call labor a normal process. After every spontaneous delivery there is damage to the perineum. The urogenital septum is always ruptured, the connective tissue is torn in numerous places, the layers of fascia are loosened, the levator ani muscles usually lacerated, and, in general, all the tissues are bruised. This condition is usually prevented by an episiotomy which should be performed in primiparas, and in multiparas where the pelvic floor simulates that of the primiparas. In 1935 Fred B. Nugent of the Philadelphia Lying-In Hospital analyzed the immediate and late results of forceps deliveries in 202 primiparas at term, and compared the results with and without episiotomy; in those patients without episiotomy, no lacerations were expected. There were 130 with and seventy-two without episiotomy; of the seventy-two receiving no episiotomy, only thirty-seven per cent failed to suffer some sort of laceration; thirty per cent received second and third degree lacerations. As to the late results in those receiving no episiotomy, forty per cent showed anterior-wall relaxation, twenty-eight per cent showed posterior-wall relaxation, and 33.3 per cent showed a relaxed vaginal outlet. I agree with R. P. Kelly, who said, "There are some primiparas who deliver without episiotomy and without laceration, but, when they come in six or eight weeks later, they do not have the same perineum." Of the three types of episiotomy, namely, lateral, mesiolateral, and median, I prefer the median for the following reasons: (1) it is easier to repair; (2) it causes the patient less discomfort during healing; (3) it heals more rapidly; and (4) when healed, a well-repaired midline episiotomy produces practically the same snug perineum as was present before the operation was done. Median episiotomy has only one disadvantage: there is more danger of obtaining an extension into the rectum, but, if good control of the head is effected by low forceps, the incidence of rectal tears is cut to a minimum.

A brief word about obstetric anesthesia. Of the three most commonly used anesthetics, ether, nitrous oxide, and chloroform, ether is by far the safest for general use, especially if the patient is going to be fully anesthetized for an episiotomy and forceps. For short, intermittent anesthesia during pains, nitrous oxide in the ratio of 85:15 is excellent, its chief drawback being the danger of producing anoxemic necrosis of brain tissue in both the mother and infant. Chloroform is more or less obsolete for the following reasons: (1) it is twenty-five times as toxic as ether; (2) it exerts a toxic, depressant effect on heart muscle; and (3) it at times produces irreparable liver damage.

I strongly advocate prophylactic low forceps in the delivery of primiparas and in multiparas with rigid perinea. It is logical to place hospital obstetricians into two great groups: (1) those who are advocates of a policy in which they play the part of glorified midwives; and (2) those who endeavor to shorten the hours of labor by timely intervention.

I am not going to stand up here and expound why I think prophylactic low forceps should be employed; I am going to quote verbatim the figures and opinions of some of our country's leading obstetricians:

Joseph B. De Lee (Chicago): "Every man who does obstetrics ought to know how to do an episiotomy and the prophylactic forceps operation—the baby's brain will suffer less damage, and the mother's pelvic organ supports will likewise be safer."

J. P. Greenhill (Chicago): "Figures seem to show that instrumental delivery is safer than prolonged, hard, unassisted labor; for it seems that the brief, moderate compression of the head in a skillfully-performed forceps operation is less dangerous to the integrity of the brain than the prolonged pounding and congestion it suffers from a hard, spontaneous delivery. In a large study at the Chicago Lying-In Hospital, four times as many babies were injured by so-called normal deliveries as by low-forceps deliveries."

Louis H. Douglass (Baltimore): "It has been proved very conclusively that episiotomy and outlet forceps in competent hands decrease rather than increase the risk to both mother and child."

David S. Hillis (Northwestern Medical School): "It has been stated on good authority that the incidence of cerebral hemorrhage is lower in cases which are delivered by means of outlet forceps and episiotomy than when the head is allowed to deliver spontaneously."

Edith L. Potter and Fred Adair (Chicago): "Of the 10,877 infants born by spontaneous cephalic delivery, 1.5 per cent were stillborn and 1.5 per cent died in the neonatal period. Of the 3,995 deliveries with low forceps, .55 per cent were stillborn and .87 per cent died during the neonatal period."

Carl Henry Davis (Wilmington, Del.): "Out of 750 spontaneous deliveries, there was a fetal mortality of 2.13 per cent; out of 287 low forceps deliveries, there was a fetal mortality rate of no per cent."

Arthur H. Bill (Cleveland): "I prefer to use prophylactic low forceps because I believe that there are certain distinct advantages, including a better aseptic technique, more skillful control of the rapidity of birth, and prevention of unnecessary prolonged pressure upon the child's head."

Alfred C. Beck (Brooklyn): "In 2,059 deliveries, there were six times as many cases of intracranial hemorrhage in spontaneous deliveries as in low-forceps deliveries."

And lastly, James Robert Goodall (McGill University, Montreal): "There are four reasons for advocating a policy of timely intervention: (1) to relieve the patient and shorten labor; (2) to reduce fatigue and prevent exhaustion; (3) to minimize the traumatisms of the second stage; and (4) to lessen fetal mortality."

Conduct of the Third Stage

It is in the third stage of labor that pituitrin and allied oxytoxics have a definitely useful role; here this drug is gainfully employed in aiding the soft, boggy uterus to contract, thereby cutting down blood loss and lessening the possibility of post-partum hemorrhage. Opinions differ as to when the pituitary extract should be administered; some men give it during or immediately after the birth of the child, claiming that it hastens the expulsion of the placenta; others wait until after the placenta is expressed, thereby lessening the chance of the formation of a Bandl's contraction ring, resulting in a retained placenta. Personally, I employ the latter method, and use pitocin, put out by Parke, Davis & Co., since the same results are obtained with this drug as with pituitrin, and no rise in blood pressure follows its use.

After the infant is born, we are all too prone to use too much haste in removing the placenta; haste is waste, and haste is dangerous. Time is cheap, and we have plenty of it, so let the placenta separate of its own free will; after this, by employing the Credé maneuver and gentle traction on the cord, the placenta usually easily follows. Thus ends the third stage, and thus ends this paper.

In closing, may I thank you one and all for your very kind and courteous attention.

THE TENNESSEE PNEUMONIA CONTROL PROGRAM—REPORT FOR THE FISCAL YEAR 1940-1941

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The purpose of this report is to give the results of the Pneumonia Control Program which was carried on jointly by the Tennessee State Medical Association and the Tennessee Department of Public Health during the fiscal year 1940-1941. The organization of the program and the excellent work done by the instructor-consultants has been discussed in papers presented at the meeting of the Tennessee State Medical Association in April, 1941, all of which have been printed in the JOURNAL.

The general distribution of sulfapyridine and sulfathiazole to physicians at no cost for the treatment of pneumonia cases was started in December, 1940. The decision as to whether or not a patient should receive the free drugs was left entirely to the discretion of the physician in attendance. In areas with full-time health service the local health officers acted as distributing agents for the drugs, while in areas without full-time health service the contractor for supplying drugs designated drugstores in key points in each area to act as local distributors for the drugs.

In requesting drugs the physician filled out a drug-requested-and-report-of-case card. Two weeks after drugs were requested for a particular patient, the physician was requested to fill out a clinical-report-of-case card. From these reports it was possible to evaluate the program which was carried on during the fiscal year 1940-1941.

Due to the fact that the program was not started generally until late in the pneumonia season, maximum benefits from the program could not be expected. Fortunately, the distribution of drugs was started just at the beginning of a mild influenza epidemic and undoubtedly was of benefit in preventing deaths from pneumonia at that time. Although all the information was not given on all cards, physicians returned clinical-report-of-case cards for 955 (86.8 per cent) of the 1,100 patients for whom drugs were requested. One thousand twenty-three patients were residents of rural areas and towns of less than 10,000 population. Only seventy-seven of the patients were residents of cities of 10,000 population and over.

Information as to treatment at home or in a hospital was given for 640 patients. Six hundred twenty-four (97.5 per cent) were treated at home and sixteen (2.5 per cent) were treated in a hospital.

The laboratory was used as a method of diagnosis in a very few cases. Sputum was stated to have been examined for the pneumococcus in only seventeen instances, Type I pneumococci being found in three, Type II in one, Type III in one, Type VII in one, Type XIV in two, Type XXIII in one, Type XXIX in one, and seven being found negative.

In Table I is given the outcome of persons by color and sex with pneumonia, for whom drugs were requested. Nine hundred forty-four of the patients for whom drugs were requested were white, 151 were colored, and five were of unknown color. Six hundred twenty-one of the patients were males, 470

TABLE I

OUTCOME OF PERSONS WITH PNEUMONIA FOR WHOM DRUGS WERE REQUESTED, BY COLOR AND SEX

Sex	Total Total Cases	 Died Number	 Died Per Cent	White Total Cases	 Died Number	 Died Per Cent	Colored Total Cases	 Died Number	 Died Per Cent
Total	1,100*	56	5.1	944	47	5.0	151	9	6.0
Male	621	31	5.0	536	25	4.7	85	6	7.1
Female	470	25	5.3	404	22	5.4	66	3	4.5
Unknown	9*	--	--	4	--	--	--	--	--

*The color was not given for five cases.

From the Tennessee Department of Public Health. [1]Commissioner of Public Health; [2]Director of Division of Preventable Diseases; [3]Director of Statistical Service.

were females, and the sex was unknown for nine patients.

Clinical-report-of-case cards were not received for 145 patients for whom drugs were requested and, therefore, no information was given as to the outcome among this group. In order to determine the number of deaths among all of the 1,100 patients with pneumonia, the drug-requested-and-report-of-case cards were checked against death certificates received by the Division of Vital Statistics. Among the 1,100 persons for whom drugs were requested, there were fifty-six deaths (5.1 per cent). Although it is not possible to state how much reduction in the case fatality rate was due to the sulfonamide drugs, because of a number of factors which might be involved, the fatality rate of 5.1 per cent gives sufficient evidence that many lives were saved as a result of the program, since the death rate from pneumococcus pneumonia has been reported to be usually from twenty to thirty deaths per 100 cases.

The physicians indicated that 567 of the cases of pneumonia were of the lobar type, 453 were bronchopneumonia, and eighty were unspecified as to type. The case fatality rate in persons with bronchopneumonia was 7.3 per cent and in persons with lobar pneumonia 3.5 per cent. Although the figures for the case fatality rate by age were small, they suggested that, as would be expected, the rates were highest in the extremes of life.

It may be noted in Table II that sulfapyridine was given in 128 cases, sulfathiazole was given in 958 cases, and both drugs were used in eight cases. The case fatality rate was 7.8 per cent among those persons given sulfapyridine and 4.7 per cent among those given sulfathiazole. Since the number of cases are relatively small, the differences in these case fatality rates and the case fatality rates according to type of pneumonia cannot be used to measure the relative efficiency of the drugs. Among the 567 persons with lobar pneumonia, the case fatality rate was 4.8 per cent when sulfapyridine was used and 3.2 per cent when sulfathiazole was used. The case fatality rate in the 453 cases of brochopneumonia was 10.2 per cent when sulfapyridine was used and 6.9 per cent when sulfathiazole was used. Among the 878 persons with pneumonia for whom the amount of sulfapyridine and sulfathiazole given the patient was stated, the average amount of sulfapyridine given a patient was 17.3 grams and of sulfathiazole 18.8 grams.

Although the sample was small and the date the drug was first given is not available in a large number of cases, the figures suggested that the longer the delay after onset

TABLE II

OUTCOME OF PERSONS WITH PNEUMONIA FOR WHOM DRUGS WERE REQUESTED BY TYPE OF PNEUMONIA AND BY DRUG USED

DRUG USED	TOTAL			LOBAR PNEUMONIA			BRONCHOPNEUMONIA			OTHER PNEUMONIA		
		Died			Died			Died			Died	
	Total Cases	Number	Per Cent	Total Cases	Number	Per Cent	Total Cases	Number	Per Cent	Total Cases	Number	Per Cent
Total	1,100	56	5.1	567	20	3.5	453	33	7.3	80	3	3.8
Sulfapyridine	128	10	7.8	62	3	4.8	59	6	10.2	7	1	14.3
Sulfathiazole	958	45	4.7	497	16	3.2	389	27	6.9	72	2	2.8
Both drugs	8	1	12.5	4	1	25.0	3	--	--	1	--	--
Unspecified	6	--	--	4	--	--	2	--	--	--	--	--

TABLE III

DRUG REACTIONS REPORTED AMONG 955 PATIENTS GIVEN SULFAPYRIDINE AND SULFATHIAZOLE

DRUG REACTIONS	TOTAL		SULFAPYRIDINE		SULFATHIAZOLE	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Total cases	955*	----	120	----	824	----
Vomiting	174	18.2	44	36.7	127	15.4
Leukopenia	3	0.3	1	0.8	2	0.2
Anemia	36	3.8	10	8.3	26	3.2
Hematuria	8	0.8	3	2.5	5	0.6
Skin rash	16	1.7	3	2.5	12	1.5
Other	10	1.0	2	1.7	8	1.0

*Both drugs were given in eight cases. The type of drug used was not specified in three cases.

before the drug is given the greater the fatality. These figures emphasize the importance of the physician being called early in the illness in order that maximum benefit may be received from the drug.

In Table III are given the reactions which were reported to have occurred with the use of sulfapyridine and sulfathiazole. Physicians returned clinical-report-of-case cards for 955 patients. The percentage of reactions occurring is based on these returns. The most common reaction encountered with both drugs was vomiting. It is suggested by the figures that leukopenia, anemia, hematuria, skin rashes, as well as vomiting, were more common among persons given sulfapyridine than those given sulfathiazole. It is not known whether anemia was based on hemoglobin determinations or clinical impressions or whether hematuria was based on macroscopic or microscopic observations. With the exception of skin rashes, these observations were generally in line with the findings in carefully-controlled studies. In such studies, it has been found that skin rashes occur more often with sulfathiazole than with sulfapyridine.

Influenza, measles, whooping cough, and the common cold were the most common contributory conditions given. Among the four most common contributory conditions, the case fatality rate was 11.1 per cent for whooping cough, 6.1 per cent for influenza, 3.1 per cent for measles, and there were no fatalities among the group with common colds. Among the other contributory conditions given were scarlet fever (1), chicken pox (2), anemia (1), alcoholism (1), diseases of the cardiovascular system (2), septic sore throat (3), childbirth or abortion (4), nephritis (2), and tuberculosis (5). Among the complications stated to have occurred, two patients had lung abscesses, twenty-three had otitis media, twenty-four had empyema or pleural effusion, and eleven persons were said to have had other complications.

SUMMARY

1. Drugs were distributed for the treatment of 1,100 patients with pneumonia. One thousand twenty-three patients were residents of rural areas and towns of less than 10,000 population. According to the information given, 97.5 per cent were treated at home and 2.5 per cent in hospitals.

2. Among the 1,100 persons for whom drugs were requested, there were fifty-six known deaths (5.1 per cent). This case fatality rate gives sufficient evidence that many lives were saved as a result of the program.

3. Sulfapyridine was used in the treatment in 128 cases, sulfathiazole in 958 cases, and both drugs in eight cases. Since the number of cases treated with sulfapyridine was small, no conclusion can be reached from data obtained thus far in this program regarding the difference in case fatality rates from these drugs.

4. The study indicates that the longer the delay after onset of pneumonia before the drug is given the greater the fatality from the disease. This emphasizes the importance of the physician being called early in the illness.

5. Reactions were more common among those persons given sulfapyridine than among those given sulfathiazole. With the exception of skin rashes, these observations were generally in line with the findings of other carefully-controlled studies.

6. Influenza, measles, whooping cough, and the common cold were the most common contributory conditions given.

REGIONAL ENTERITIS*

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Granulomas of the intestinal tract were first recognized and described in 1828 by John Abercrombie. Tuberculosis, syphilis, and actinomycosis were recognized as falling in the general category of granulomas. In addition to these three types of granuloma a large group of nonspecific benign granulomas have been described. This term has covered a hodgepodge of nonmalignant and nonspecific cases including foreign-body tumors, trauma reactions, perforating reactions, reaction to strangulation, reaction to circulatory interference, and so on.

However, in 1932, Crohn, Ginzburger, and Oppenheimer of New York segregated from the confused category of this latter group a distinct clinical entity, namely, terminal ileitis. This disease they recognized as a specific subgroup of the large group of granulomas. Their original description of this condition is as follows: Terminal ileitis is a subacute or chronic disease of the terminal ileum characterized by necrotizing and cicatrizing inflammation. The ulceration is accompanied by a disproportionate connective tissue reaction which frequently leads to stenosis and fistula formation.

Following this paper by Crohn, the literature shortly became flooded with articles giving case reports of this newly-described entity. It was soon obvious that Crohn had been mistaken in thinking that the disease was limited to the distal ileum, as reports showed that it might occur—or rather did occur—in any part of the intestinal tract. Aside from this one error, Crohn and his associates gave a classical description of the pathology, symptomatology, course of the disease, and treatment. So excellent was their article that but little further knowledge of the disease has been added in the nine years elapsing since its publication.

Unfortunately, a name for this disease has not been universally adopted. Terminal ileitis, regional ileitis, chronic cicatrizing enteritis, segmental enteritis, sclerosing ileitis, and a host of other names have been suggested, but the term adopted at the present time by most authors is regional enteritis.

Innumerable proposals have been made concerning the etiology of regional enteritis. These have varied from the Bargen's bacillus to vitamin deficiency and from a neurotropic disturbance to an allergic manifestation. Suffice it to say that at present the etiology is unknown.

To describe the clinical and pathological manifestations of regional enteritis it is necessary first to understand and to differentiate four stages through which the disease may progress. These stages are: first, peritoneal irritation and inflammation; second, ulceration; third, stenosis and obstruction; and fourth, abscess and fistula formation.

The first stage is acute and in the majority of cases simulates acute appendicitis and usually cannot be preoperatively differentiated from it except that the onset of symptoms appears to be more gradual than in acute appendicitis. There are intestinal cramps with nausea and vomiting. Tenderness, muscle spasm, fever, mild leucocytosis, and sometimes a palpable mass are present. Occasionally, however, the onset is insidious with a mild diarrhea and very little abdominal pain. If untreated, this first stage lasts only a few days or at the most a month. It may then spontaneously subside or it may develop into the stage of ulceration. The cramping pain, nausea, vomiting, and tenderness continue in this second stage as does the fever, but, instead of remaining at 101 or 102 degrees, it is usually of a lower grade. Diarrhea in which the stools contain both blood and mucus occurs in about seventy per cent of the cases. Consequently, a secondary anemia frequently develops. Weight loss and general malaise are fairly constant symptoms. This state may last for a year or more and probably never clears up spontaneously.

If exploration is performed in either of these early states, the affected segment of gut is easily discovered and found to be

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*Read before the Nashville Surgical Society, February 13, 1942.

sharply demarcated. It is greatly thickened, red, and blotchy. The intestine is soggy and edematous and has been described as feeling like a rubber hose. The mesentery is greatly thickened and edematous and contains hyperplastic glands. There is usually a large amount of clear fluid free in the peritoneal cavity. Ulceration, when it occurs, is usually on the mesenteric side of the gut, and the ulcers run longitudinally. The disease may involve only a few inches of the intestine or may, on the other hand, involve several feet. There may be an isolated diseased segment or there may be several diseased segments which are separated by skip areas of healthy, perfectly normal intestine. The area which is by far the most frequent site of the lesion is the distal ileum and the cecum. However, reports have been made of the occurrence of the disease in all areas from the esophagus to the rectum.

In these early stages the microscopic picture is one of nonspecific inflammation. There is patchy ulceration with proliferation of the mucosa between patches. All of the coats of the intestine are edematous and infiltrated with inflammatory cells. There is considerable granulation tissue and well-defined connective tissue stroma with developing blood vessels. An ineffectual reparative tissue goes hand in hand with the destructive process. This forms the major part of the thickening and accounts for the stenosis which is to follow in the third stage.

Clinically, this third, or stenotic, stage is manifested by the symptoms of partial intestinal obstruction. There are violent cramps with vomiting and constipation, distention and visible peristalsis, and a mass palpable usually in the right lower quadrant. All too often, unfortunately, it is not until this stage is reached that the disease is diagnosed and brought to a rational treatment.

The fourth and last stage is accompanied by the formation of abscesses and fistulae. The fistula may be external, perforating the abdominal wall, or it may be internal, connecting two separate loops of intestine. The external fistulae very frequently follow an operation, such as an appendectomy, at which operation the true nature of the disease was not recognized. These fistulae never close spontaneously and are resistant to surgical closure. Loss of weight, anemia, severe malaise, and even prostration are also prominent in this phase of the disease.

Diagnosis of the acute stage is almost impossible preoperatively, so similar is it to acute appendicitis. After the onset of ulceration the diagnosis is made by the presence of cramplike pain which may be relieved by vomiting or defecation; low-grade fever and leucocytosis; four or five watery stools per day, each containing blood and mucus; the presence of anemia, weight loss, malaise, and a palpable mass in the right lower quadrant in the majority of cases. After the development of stenosis, in the third state, are added the symptoms of partial obstruction and the diagnostic X-ray findings. The X-ray diagnosis is made after giving the barium meal and following a special technique for visualization of the small intestine. The barium enema may also be of value if the disease affects the colon or if sufficient barium is given to pass through the ileocecal valve into the ileum. This will usually show a filling defect. The last-filled loop of intestine above the lesion may show a taper point above the barium and the affected loop of bowel will show Kantor's string sign, which is almost pathognomonic. This is a thin, irregular, linear shadow extending from the region of the last-filled loop through the affected region. This, of course, represents the barium filtering through the stenosed loop. The diseased loop is stiffened and immobile. Actual obstruction is manifested by stasis in the intestines and by dilatation in the proximal loops. In addition the X-ray may show fistulae filled with barium. Diagnosis of the last stage of the disease should always be suspected in the presence of intestinal fistulae, external or internal.

Regional enteritis must be diagnostically differentiated from ileocecal tuberculosis, hyperplastic appendicitis, Meckel's diverticulum, ulcerative colitis, actinomycosis, carcinoma, sarcoma, and Hodgkin's disease. The most important point is to be aware of the manifestations of regional enteritis and to consider these in the instance of all acute and chronic conditions of the abdomen. Furthermore, it is most important that we all be aware of the proper treatment of the condition after it has been diagnosed.

Whether the treatment is to be medical or surgical or a combination of the two is the first point to be decided. In the first or acute state it is probable that the medical treatment alone is indicated. In all of the following stages the medical treatment must be associated with surgery to be of value. In an article published in 1939 Crohn stated that the acute fulminating cases resembling acute appendicitis will often resolve spontaneously. He reports eleven such acute cases, out of which eight were never heard from again, presumably because their diseases healed. Pemberton and Brown report a similar experience. Thus in the very early cases surgery is probably not advisable because in the majority of cases it will not be necessary. The conservative therapeutic measures advocated are high caloric, high protein, high vitamin, low residue diet; repeated small transfusions; rest and sun baths. I have found no reference to the efficacy of the sulfonamide group of drugs.

Recommendations for the treatment of the chronic cases are, on the other hand, almost universally surgical. Crohn made it clear in his report that he had never seen a *chronic* granulomatous ileitis heal with a return to normal health and integrity of the bowel without scarring or cicatrization. The defect stays until surgically removed, although long periods of symptomatic remission may occur. These long remissions have led to many false reports of spontaneous cures. Autopsy records have, however, failed to reveal any evidence of a spontaneous cure. Until the assumption of Crohn that there are no spontaneous cures has been disproved, then surgical removal of the lesion will have to be relied upon. It is of interest to consider the different surgical procedures available and the value of each. Pemberton and Brown, in reporting thirty-nine cases, state that twenty-six of these patients had had one and often more unsuccessful operations before they appeared at the Mayo Clinic. Sixteen of these twenty-six patients had had only an appendectomy. Further and more rational surgical therapy had not been carried out because of failure to make the proper diagnosis or ignorance concerning the proper surgical treatment. Bargen, in reporting eighteen cases, found that ten had had previous operations. Undoubtedly the operation of choice is complete resection of the involved loop of bowel with several inches of normal tissue at each end as well as the removal of all the thickened mesentery and glands. Felger and Schenk, in August, 1940, reviewed the literature and found numerous instances of recurrence following resection. They attribute these failures to: first, the resection being insufficiently distant from the margin of obviously diseased bowel; second, permitting involved glands to remain; third, the existence of skip areas which were unnoticed at the time of resection. They believe that a more careful follow-up of these resected cases over a long period of years would reveal a much higher percentage of recurrence. They question a good many of the so-called cures reported by other surgeons because of their failure to follow up, clinically or roentgenologically, for a sufficiently long period of time. They state that recurrence may occur at any time up to ten years following the operation. Lee reported a recurrence in five of his seven resected cases. An interesting feature of this report is that the two cases without recurrence were operated upon fairly early—six months and eighteen months, respectively, after the onset of symptoms. The five recurrence cases had had symptoms for an average of thirty months preoperatively. This is a good illustration of the value of early diagnosis and treatment. Lee also states that recurrences are often overlooked and undiagnosed because of failure to take follow-up roentgenograms. Several of the cases which he reported as recurrences were symptomatically well, but X-rays showed a very definite recurrence. Rhoads reports recurrence in nine per cent and Shapiro in thirty-two per cent following resection.

A good many surgeons have used the simple enteroenterostomy to sidetrack the diseased loop without removing it. Since the lesion is usually in the distal ileum, the operation amounts to a side-to-side anastomosis of the ileum and the transverse colon. This operation is undoubtedly of some value, but considerably less than half of the patients so treated are even symptomatically cured. Reports by different surgeons give a twenty to fifty per cent rate of symptomatic cure with this operation. In a series of eighty-eight collected cases reported by Shapiro he found cures in only thirty per cent of the cases who had had the short-circuiting operation alone as compared with a seventy per cent rate of cure in the resected cases.

And, also, there are many reports of the subsequent spread of the disease into what was at the time of the first operation apparently normal bowel. This frequently necessitates another operation, and at this time resection may be impossible because of the advanced stage of the disease. Furthermore, it is known that an obstructed loop of bowel that is isolated by entero-enterostomy will independently give rise to symptoms. These symptoms are chiefly diarrhea, distention, weight loss, and debility. Transection of the ileum without its removal, but accompanied by entero-enterostomy has seemed to give better results, preventing spread of the disease more effectively than the simple enteroenterostomy. Thus, because of its failure to cure, even symptomatically, because of frequence of spread of the disease following the operation, and because of the symptoms associated with the isolated loop—for these reasons enteroenterostomy does not seem to be acceptable treatment. However, there are a certain number of the advanced cases that cannot be resected. The occurrence of numerous internal or external fistulae and the presence of many dense adhesions in the advanced stages of the enteritis will often prevent the safe resection of the diseased bowel. In such cases enteroenterostomy is probably the best means of treatment available.

The two-stage operation has been advocated as a routine procedure by several surgeons, and is undoubtedly of merit in certain far-advanced cases. The first stage consists of the simple enteroenterostomy with or without transection of the ileum. Several weeks or even months later the abdomen is reopened and the diseased bowel resected. This procedure can often be followed to advantage where a one-stage resection cannot be safely carried out.

Simple enterostomy is of no value except as a palliative measure in those obstructed cases which cannot be resected, and as a preliminary operation prior to resection.

The operative mortality for resection as reported by several surgeons is in the neighborhood of fifteen per cent. The mortality for enteroenterostomy is about ten per cent.

In all of these surgical cases the value of associated medical measures should not be overlooked. The diet should be high in calories and in protein because of the cachexia usually present and because of the disturbed metabolism usually associated with any extensive lesion of the intestine. The diet should be high in vitamins, particularly vitamin C, because of its value in the healing and repair of tissue, and vitamin B, because a deficiency of this vitamin may produce a disturbance of the physiology of the small intestine with a resultant inanition. Repeated small transfusions and rest are also to be recommended.

In conclusion, regional enteritis, as a clinical and pathological entity, is only recently recognized and described. Its clinical manifestations are multifarious, resembling at times those of appendicitis, colitis, tuberculosis, carcinoma, and other conditions. This disease frequently goes unrecognized, and for this and other reasons is often improperly treated. The correct treatment is complete surgical removal of the lesion.

AN UNUSUAL CASE OF INTESTINAL OBSTRUCTION

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Intestinal obstruction is accompanied by such a high mortality rate that any preventive measure is worth reporting. This case of obstruction was due to a loop of small intestine passing through an opening formed as a result of the mesoappendix being tied over the inverted stump of the appendix. As far as I am able to determine, this is the only case reported in American literature during the last few years.

REPORT OF CASE

History.—A white female, age ten, was brought to the Nashville General Hospital on March 14, 1937, complaining of lower abdominal pain. About eight hours previous to her admittance, the pain was intermittent and cramping, and was located in her upper abdomen and around her umbilicus. She was nauseated, but had not vomited. On her arrival at the hospital her pain was much less severe. There was no history of diarrhea, no burning or frequency of urination, and no history of a similar attack.

On examination there was found a well-nourished, well-developed white female lying in bed with both legs flexed. The temperature was 100 degrees Fahrenheit; the pulse rate 120; the respiration twenty-four; the white blood count was 19,200. On abdominal examination there was found rigidity of the right rectus muscle, tenderness to pressure, and also rebound tenderness. A diagnosis of acute appendicitis was made.

Operation.—The patient was operated by the assistant resident through a McBurney incision. The appendix was found to be definitely inflamed, and the mesoappendix was unusually long and broad so that he was unable to tie all of the mesoappendix in one ligature. Instead, he passed a ligature through a bloodless area and ligated the distal portion of the mesoappendix with No. 1 plain catgut (Figure 1), put a hemostat on the end of the suture, which was left long, and after several other portions of the mesoappendix was tied, the distal portion of the mesoappendix was anchored over the invaginated stump of the appendix. (Figure 2.)

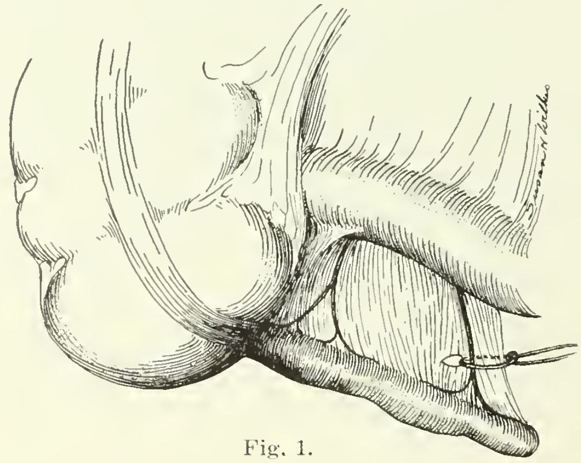

Fig. 1.

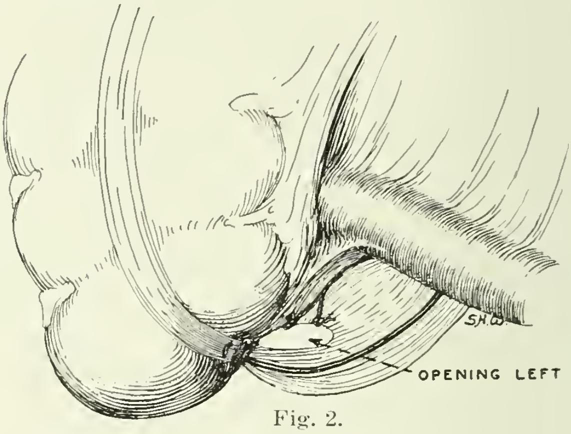

Fig. 2.

Postoperative Care and Treatment.—The patient made an uneventful recovery and was dismissed from the hospital on the eighth postoperative day.

About three weeks later she came again to the Out-Patient Department because of cramping pain in the lower abdomen, and her mother related that for two weeks after her dismissal from the hospital she was entirely well and had returned to school. The history was that the girl had several attacks of intermittent, cramping pains in her abdomen associated with nausea. These attacks were only of a few hours' duration, but the latest attack had continued longer than usual, and she had vomited several times. On examination it was found that she had no distention of her abdomen, no increase in temperature or pulse rate, and she was sent home with a diagnosis of an "intestinal upset." However, one week later, one month following the operation, she again was admitted to the hospital after having had cramping pains of twenty-four hours' duration and continuous vomiting.

On examination her temperature was 100 degrees Fahrenheit; pulse rate 110; respiration twenty. No masses could be palpated, but the abdomen was slightly distended. There was no visible peristalsis. At frequent intervals she would have severe cramping pain in her abdomen, which would force her to draw both legs up against her abdomen and cry out in pain. The urine was negative. White blood count normal. There were no other abnormal physical findings present. A diagnosis of intestinal obstruction was made, and the abdomen was explored through a right rectus incision. A part of the small intestine was found discolored and protruding through an opening in the region of the caecum. The intestine was not fixed by adhesions, as additional small intestine could be pulled through the opening, but the distended dilated gut could not be pulled back through the opening. On closer examination it was found that the opening was formed by the distal portion of the mesoappendix being tied over the inverted stump of the appendix. (Figure 3.) The patient made an uneventful recovery and left the hospital on the tenth postoperative day.

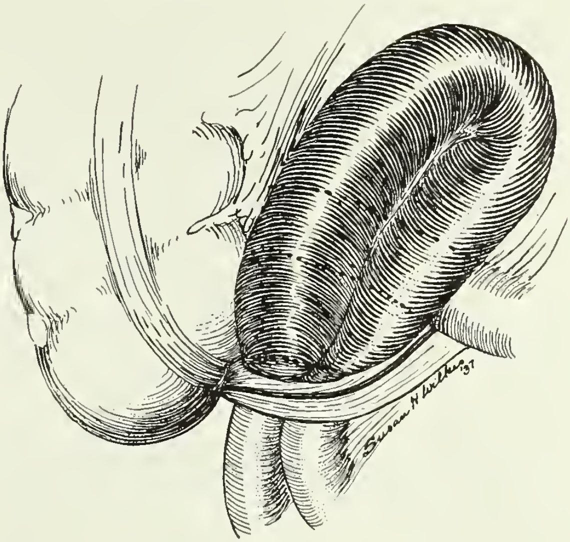

Fig. 3.

Comments.—It has been my practice not to tie the mesoappendix over the invaginated stump of the appendix for fear that my ligature might slip off of the mesoappendix, causing secondary hemorrhage, or that it might cause a kinking of the ileum. This technique, however, is used by a number of surgeons, but the fault in the procedure herewith reported was that an opening was left. This case illustrates the well-known, but sometimes disregarded, axiom: never leave an opening in an abdominal operation.

AN INVESTIGATION OF THE PSYCHOLOGICAL EFFECTS OF SODIUM BROMIDE

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This paper reports an attempt to investigate the psychological effects of sodium bromide by experimental methods. The study was carried out with the full knowledge and cooperation of the patients who served as subjects and of the hospital authorities. Data concerning the subjects under investigation, the medication given, the psychological tests used, general procedures undertaken, and the results of this material will be interpreted in the form of general conclusions.

A previous paper* discussed the effects of sodium bromide, interpreted from the point of view of experimental studies on animals as well as the literature dealing with abnormal response to sodium bromide medication or the condition medically known as "brominism." This material will not be repeated here. Only the data pertaining to the actual experimental study done in the hospital will be considered.

A difficulty arose in the use of a group of ten patients, however, due to interruptions in the sequence of medication and testing from time to time by the voluntary withdrawal of certain patients from hospital treatment, while others were discharged by the hospital authorities. In this way many of the ten left the group, so that the charts showing the responses of this group (Group A) to sodium bromide indicate complete results on only four subjects.

In order to meet the difficulty occasioned by these interruptions, it was necessary to find an additional group of subjects who could be relied upon to continue during the course of the study. In the same hospital eight male employees between the ages of eighteen and thirty years were found who were willing to cooperate in the experiment. All these men were in good health and met the physical requirements for employment set by the hospital authorities based upon periodic physical examinations. Of the second group (Group B), all ate their meals at the hospital and half of them slept there. It was considered especially desirable to gain the cooperation of this group of employees as they represented "normal" individuals in good health. In this way it was felt that the traditional difficulties of analyzing the effects of one drug when disease and other drugs were present in the individual systems was obviated.

This paper will evaluate the findings as to psychological effects of sodium bromide on some members of the patient group (Group A) and on the entire membership of the hospital employees' group (Group B).

SUBJECTS

Group A—Ten male ambulatory hospital patients with venereal disease between the ages of eighteen and thirty. The number who participated in the entire study was reduced to four.

Group B—Eight male hospital employees in good health between the ages of eighteen and thirty.

MEDICATION

Each subject took one teaspoonful of sodium bromide containing thirteen and one-third grains after each meal mixed with syrup of wild cherry and flavored with peppermint. Since the medicine was taken three times a day, the daily dosage was forty grains of sodium bromide. The medication was given for six weeks. Members of the patient group did not know what medicine was being administered or that it had any relation to the psychological tests they were receiving.

Group B knew that some form of bromide was being received, but did not know the quantity or the possible effects to be anticipated. To rule out the factor of suggestibility even further, members of Group B were led to suppose that each was receiving a dose of different strength from his fellows. Actually all doses were uniform.

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*Moore, M., Sohler, T., and Alexander, L. Bromide Intoxication. Confinia Neurologica, Volume III, page 1, 1940.

All members of both groups received the drug as described above except that one member of Group B received no medication in order that he might be used as a control subject. Instead, he received a bland solution colored and flavored in the same manner as the sodium bromide solution.

Three members of Group B developed rashes during the period in which they received medication. Bromide ingestion was immediately abandoned, although there is considerable doubt in all cases that sodium bromide was responsible for the eruption. In one case the rash was attributed to the aftereffects of sunburn; another seemed to be due to the effects of suggestion in addition to the possibility of infection while swimming in contaminated water. The distribution of the rash in the third case seemed definitely due to the drug.

BLOOD DETERMINATIONS

From the end of the first week, during which sodium bromide was administered until no bromide showed in the blood, venous bloods were taken weekly from each subject and their bromide content determined.

THE TESTING PROGRAM

Because of the condition under which the experiment took place, and the limited amount of time each subject could devote to the tests, it was essential to select those which required minimal apparatus and which could be quickly administered, yet which would be of high reliability and validity. The tests chosen are well known and have been used in many psychological investigations. The series consisted of a test for *strength of grip* which gives an indication of the general well-being of the individual, a *tapping test* to measure the speed of voluntary movement, *reaction time tests* to measure the speed of muscular reaction to a particular stimulus, while at the same time providing tests of the higher cortical processes involved in perception, and a *cancellation test* to measure attention.

Since the methods of administering and scoring these tests varies somewhat with particular apparatus and instructions used, the procedure for each test requires some description.

STRENGTH OF GRIP

Apparatus.—Hand dynamometer.

Method.—The subject gripped the instrument and raised the dynamometer until level with his head. He then brought it down quickly, at the same time exerting maximal pressure. Three trials were then taken for each hand, alternating from left hand to right hand.

Record.—The score is the best of three trials for each hand.

TAPPING

Apparatus.—Two tapping plates for alternate strokes; electric counter; tapping stylus; dry-cell batteries; stop watch; knife switch.

Method.—The tapping plate, the counter, the stylus, and switch were connected in series in such a way that when the stylus came into contact with either plate it closed the circuit and turned the counter. The subject was instructed to hold the stylus in his right hand and at the signal "go" to tap first on one plate and then on the other as rapidly as possible. At the "go" signal, the observer threw in the switch, at the same time starting the watch. At the end of thirty seconds, the observer threw out the switch, stopped the subject, and read the counter. The test was repeated for the left hand.

Record.—The number of taps indicated on the counter was taken as the score.

REACTION TIME

Apparatus.—Three telegraphic keys, Marietta Reaction Board; chronoscope; buzzer; battery; light with red, green, and yellow screens; knife switches.

Method.—The telegraph keys, light, buzzer, etc., were connected in series. The subject sat in front of two of the telegraph keys, resting his right forearm between them so that he might strike either key with his right hand. He was told that following the sound of the buzzer he would see a light and that as soon as he observed this light he was to strike the left-hand key. A series of ten tests were made for his reaction to a yellow light. The subject was then instructed that he would see a red or a green light instead of a yellow light following the sound of the buzzer. If he observed a red light, he was to strike the right-hand key, and if he observed a green light he was to strike the left-hand key.

Record.—The chronoscope recorded in one-hundredth of a second the length of time between the turning on of the light and subject's reaction. The score was the average of each of the ten tests.

CANCELLATION

Apparatus.—A sheet of paper covered with lines of pied lower case type; stop watch.

Method.—The sheet was given to the subject who was instructed to cross out as many of a given letter as was possible in the time allowed. At the signal "go" the watch was started and the subject was stopped at the end of two minutes.

Record.—The score was the number of times the given letter was crossed out.

TESTING PROCEDURE

Group A was given three trials before taking any sodium bromide to familiarize the members with the procedure. These trials were given on alternating days. Following this, subjects took the tests three times a week. Group B was given two trials before medication on alternating days and then took the tests three times a week during the rest of the experimental period.

Since it was necessary to test more than one person at a time, the tests were not given in any particular order. It took about thirty minutes for a subject to run through them with appropriate rest periods. Care was taken, however, to see that no two tests requiring the use of the same muscles followed each other. Thus, the strength of grip test and the tapping test never followed each other. It was also suggested that subjects refrain from smoking during these test procedures and this suggestion was carried out.

RESULTS

Group A.—An examination of the scores indicates that the individual consistency was maintained and that there is no appreciable improvement or diminution of ability on the tests during the ingestion of sodium bromide. There is, in general, a slight improvement which may be attributed to practice (Table I).

Group B.—There were no marked differences in the scores of individual subjects, with the exception of a slight improvement possibly attributable to practice (Table II).

Blood Bromide Levels.—When the bromide content of the blood of members of both groups is studied, it will be seen that there are individual differences in the amount of bromide accumulated in the blood, a finding consistent with individual tolerance and uncontrolled salt intake. The highest levels of accumulation in each case varied from fifty-nine to 150 milligrams per 100 cubic centimeters of blood in spite of the fact that the same dose was given in each instance (see Table III).

CONCLUSIONS

A daily dose of forty grains of sodium bromide taken over a period of six weeks does not appear to have any effect upon the behavior of the individual receiving it measured by the tests described in this study with respect to strength of grip, speed of voluntary muscular response, reaction time and attention. There are very slight changes in mean scores which may be attributed to practice effects, fatigue, and boredom. None of the changes in the scores of the individual appear to be statistically significant.

TABLE I

MEAN SCORES—GROUP A

(a) *Strength of Grip—Right Hand*—(in Kilograms)

	AND	*LAF*	*SCH*	*MAC*	*ALK*
Before Medication	39.3	34.0	35.0	37.0	54.0
During Medication	40.5	31.0	36.0	37.3	55.0
Left Hand					
Before Medication	35.6	29.3	32.3	37.3	48.3
During Medication	35.0	27.3	36.2	33.6	50.7
(b) *Tapping—Right Hand*—(Number of Taps in Thirty Seconds)					
Before Medication	133.0	158.0	182.6	137.3	133.3
During Medication	134.5	172.5	181.2	153.6	165.0

			Left Hand		
Before Medication	119.0	134.0	147.0	120.6	116.0
During Medication	117.5	146.3	151.0	133.3	141.0
	(c) *Choice Reaction Time*—(Reciprocal of Time in Hundredths of Second)				
Before Medication	20.6	13.3	17.0	20.6	21.0
During Medication	22.0	19.1	26.5	21.3	26.3
			Simple Reaction Time		
Before Medication	34.3	25.6	19.6	23.3	46.7
During Medication	38.0	38.6	40.0	27.0	41.0
	(d) *Cancellation*—(Number of Letters in Two Minutes)				
Before Medication	46.0	68.0	55.6	48.0	91.0
During Medication	58.0	62.6	54.5	55.8	79.3

TABLE II

Mean Scores—Group B

(a) *Strength of Grip—Right Hand*—(in Kilograms)

	ADA	*JON*	*KEL*	*MIK*	*TRO*	*COU*	*GUR*	*SOC*
Before Medication	35.0	36.5	50.0	42.5	55.0	36.5	55.0	43.6
During Medication	34.5	41.3	50.0	42.0	55.0	38.0	55.0	---
After Medication	35.8	47.9	51.1	46.5	---	38.0	---	---
			Left Hand					
Before Medication	35.5	39.0	47.0	40.5	41.5	36.7	53.0	41.5
During Medication	35.0	42.1	49.5	36.2	37.7	38.0	54.0	---
After Medication	37.3	44.9	53.2	38.5	---	38.0	---	---
	(b) *Tapping—Right Hand*—(Number of Taps in Thirty Seconds)							
Before Medication	187.0	149.5	142.0	181.5	163.0	185.9	191.0	183.8
During Medication	193.4	164.7	171.5	186.9	181.3	185.2	195.2	----
After Medication	191.8	178.7	180.0	197.0	----	185.4	----	----
			Left Hand					
Before Medication	139.0	125.5	125.5	151.0	121.5	162.7	164.2	138.0
During Medication	157.2	144.0	141.8	157.1	136.5	156.0	165.5	----
After Medication	163.8	161.7	152.8	164.5	----	165.8	----	----
	(c) *Choice Reaction Time*—(in Hundredths of Second)							
Before Medication	24.0	20.0	17.0	21.0	22.0	24.0	27.2	26.5
During Medication	24.6	25.5	19.2	24.3	29.7	23.7	29.8	---
After Medication	24.5	27.8	21.6	26.0	---	24.0	---	---
			Simple Reaction Time					
Before Medication	34.5	34.0	38.5	31.5	33.5	33.8	41.8	40.7
During Medication	36.4	36.3	39.5	34.1	37.0	30.7	38.9	---
After Medication	43.0	39.2	42.5	39.0	---	33.6	---	---
	(d) *Cancellation*—(Number of Letters in Two Minutes)							
Before Medication	52.5	76.0	74.0	78.0	69.5	49.0	67.0	75.3
During Medication	70.2	80.4	77.1	84.8	74.2	49.5	71.7	---
After Medication	59.0	93.4	90.5	83.5	---	50.6	---	_

TABLE III

Blood Bromide Concentration

Milligrams of Bromide Per One Hundred Cubic Centimeters of Blood

	GROUP A					GROUP B								
WEEKS	*AND*	*LAF*	*SCH*	*MAC*	*ALK*	*WKS.*	*ADA*	*JON*	*KEL*	*MIK*	*TRO*	*COU*	*GUR*	*SOC*
1	52	75	49	47	56	1	38	47	53	64	55	54	48	--
2	99	91	74	109	67	2	64	77	82	91	68	76	32	--
3	95	137	70	88	98	3	76	84	104	111	95	67	59	--
4	--	--	96	110	--	4	86	103	71	141		65	0	--
5	--	--	104	--	--	5	0	0	0	0	0	0	--	--

TOTAL VERSUS SUBTOTAL HYSTERECTOMY IN BENIGN CONDITIONS OF THE UTERUS*

JOEL C. MORRIS, B.A., M.D., Knoxville

W. L. Atlee in 1844 successfully removed a uterus containing a fibroid. Burnham, between 1853 and 1857, did several similar operations, and Gilman Kimball in 1883 did eleven hysterectomies with five deaths. T. A. Emmett in 1884 used the vesical peritoneum to peritonealize the cervical stump, and Mary A. D. Jones in 1888 did the first total hysterectomy. Stimson in 1889 insisted on the ligation of the individual uterine vessels, avoiding the mass ligature and rendering the operation less hazardous. In 1882 Ahlfeld collected reports of sixty-six hysterectomies with thirteen deaths, or a mortality of twenty per cent.

With the developments in modern surgery secondary to the developments in anesthesia, asepsis, and the developments in technique, there has been a marked increase in the number of hysterectomies done and a corresponding decrease in the mortality from the operation. The uterus being easily accessible and neither an essential nor a superfluous organ, today hysterectomy is the second most frequent abdominal operation, being second only to appendectomy. This fact should cause one to realize that there is probably no other organ surgery on which justifies a more thorough study and a higher degree of surgical judgment than on the uterus. Hysterectomy is the surest way of stopping uterine bleeding, but not always the best way.

With the popularity of hysterectomy there naturally has been developed a great many methods and techniques. The uterus is removed vaginally or abdominally, or vaginally and abdominally, and either route is used for a total or a subtotal removal. For the last decade or two there has been a great controversy over the proper method of abdominal hysterectomy, some even declaring and giving good argument that the subtotal operation should never be done, while others are equally as convinced and are able to give as good argument that the cervix should always be left intact when there is no special reason for its removal. This argument has not been settled, nor do I expect it to be settled here tonight. My purpose is only to bring to you a few facts, figures, and contentions, as gathered from the literature, and leave you to decide for yourselves.

The advocates of routine total hysterectomy offer three major arguments in support of their contention: (1) the present incidence of cervical stump cancer; (2) the prevalence of focal infection in the cervical stump; and (3) the assertion that the difference in mortality between total and subtotal hysterectomy is so small as to be a negligible factor. Opposing conservative operators, on the other hand, who are in favor of subtotal operation, except when there is definite indication for removing the cervix, are able to meet the above arguments. They contend (1) that the incidence of stump cancer should be interpreted merely as an index of the ill-advised use of the subtotal hysterectomy or of neglect in the subsequent eradication of benign cervical stump lesions, since one cannot find in the recorded data good evidence that the normal cervix becomes cancerous; (2) that in the hands of the average operator total hysterectomy is unquestionably a more hazardous operation and is attended by a substantially higher mortality than is the subtotal operation; and (3) that panhysterectomy involves far greater risk of operative and postoperative complications and a longer period of morbidity and disability.

Since the purpose of any surgical procedure is to save the patient's life and to restore her as nearly as possible to a normal condition, one should consider mortality first and then other factors. In studying the comparative mortality between total and subtotal hysterectomy, we find a very great variation of opinion expressed by the different men and substantiated by hospital records. Masson of Mayo Clinic reports 952 total hysterectomies with thirteen deaths, or a mortality of 1.4 per cent, and 451 subtotals with six deaths, or a mortality of 1.3 per cent. H. M. Nelson of Detroit reports 476 totals with eighteen deaths, or a mortality of 2.9 per cent, and 122 subtotals with four deaths, or a 3.2 per cent mortality. He also reports 169 totals with a .5 per cent mortality. Tyrone of New Orleans reports

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*Prepared for and read before the Gynecological and Obstetrical Department of the University of Pennsylvania, Graduate School of Medicine, and the Gynecological Staff of the Graduate Hospital, Philadelphia, Pennsylvania, March 29, 1939.

316 subtotals with six deaths, a 1.9 per cent mortality, and 137 totals with 2.2 per cent mortality. Counsellor reports 251 subtotals with two deaths, or .79 per cent mortality, and 219 totals with one death, or a mortality of .45 per cent. Essen Moller reported 299 subtotal hysterectomies with a two per cent mortality and 117 totals with a mortality of 6.9 per cent. Fullerton and Faulkner report 1,078 totals with a mortality of 4.1 per cent and 609 subtotals with a 4.4 per cent mortality. In these reports we see the mortality following subtotal hysterectomy ranging from .79 per cent to 4.4 per cent and that for total hysterectomy ranging from .45 per cent to 6.9 per cent.

By studying these and other reports I was caused to wonder what the average mortality for these two operations is, so I reviewed the recent literature on the subject, or as much of it as I could gain access to. In this study I was able to compile 122,359 reported abdominal hysterectomies done for benign conditions; 40,969, or 33½ per cent, of these were total hysterectomies and 81,390, or 66½ per cent, were subtotals. In the 40,969 totals there were 1,364 deaths, or a mortality of 3.3 per cent. In the 81,390 subtotals there were 1,869 deaths, or a mortality of 2.29 per cent.

Then, from this we see that there is a one per cent, or a 1.01 per cent higher, mortality from total than from subtotal hysterectomy, or an increase in mortality when we go from subtotal to the total operation of 44½ per cent. There are several other facts here that should be borne in mind: We should remember that these figures come from all sections of the country and that the greater part of them are from the larger hospitals and better gynecological services. The bulk of these operations were done by the better and more experienced gynecological operators, who can do the total operation with much more safety than the general surgeon, or the occasional operator. We should also be aware of the fact that in most cases the poor operative risk patients were operated by the subtotal technique. I still wonder that the mortality is in the less expert and nonreporting hands, where the cervix is seldom removed, and more especially do I wonder what the mortality would be if total hysterectomy should be made the universal procedure.

Nor do we see a smooth picture when we look at the question of the frequency of carcinoma of the cervical stump. Here too we find a great variation in the opinions of the different men. Here it is more speculative; more a matter of opinion because of the difficulty or impossibility of making a complete follow-up to get the figure in exact percentages. There is also a great variation in the occurrence of carcinoma of the cervical stump in the hands of the different men because of the difference in frequency of leaving the cervix behind, difference in judgment as when to take the cervix out, difference in technique in doing the subtotal hysterectomy, and difference in preoperative and postoperative care of the cervix. These great variations and variable factors are probably largely responsible for the great pressure that is brought to bear in favor of panhysterectomy in that it removes the danger of subsequent development of carcinoma of the cervical stump, and yet the denial of the advisability of the promiscuous use of the procedure by other equally as good men. There are several questions that one must answer before being able to intelligently decide whether he should do the total or subtotal operation in the majority of cases, and even more so in the questionable cases—the cases with extensive cervical infection. One must decide how frequently does carcinoma develop in the after-lying cervix, in what type of cervix it develops, and why does it develop. There is perfect agreement that there is an unknown cancer factor which requires no discussion, but the frequency and the role played by chronic infection and irritation must be considered.

Graves found five cases of cancer developing in the cervical stump after 1,399 supravaginal hysterectomies, or a frequency of .34 per cent. Essen Moller states that he never has seen such a case. Hochman found only three cases after 1,114 operations at the Woman's Hospital in New York, or a .25 per cent frequency, and Tarnier saw no cases following 1,164 operated cases. On the other hand, Gagey found twenty-five cases of carcinoma of the cervix following 729 operations, a frequency of 3.4 per cent, and Roque found eleven after 379 operations, or a 2.9 per cent frequency. Masson reported twenty-nine cases of carcinoma of the cervical stump seen at the Mayo Clinic in five years, twenty-one of which occurred at least three years after operation, but there is no way of telling how many subtotal hysterectomies these cases followed since only a small per cent of them were operated there. Pemberton and Smity found that only five out of 3,814 women who had had trachelorrhaphy subsequently developed carcinoma of the cervix. Among 1,408 women whose cervices were cauterized, there were no carcinomas developed.

Mayo and Mayo state: "A review of the cases at our clinic reveal that between January 1, 1910, and July 1, 1930, ninety-nine patients presented themselves with carcinoma of the cervical stump following subtotal hysterectomy. A consideration of these patients as a group discloses certain interesting facts. Following hysterectomies performed at the clinic, cervical carcinoma developed in twelve cases in which the operation was performed for benign conditions and in three cases in which it was performed in questionably benign conditions. Following hysterectomies performed elsewhere, cervical cancer developed in twenty-three cases in which the operation was performed for benign conditions and in sixty-one cases in which it was performed for questionably benign conditions.

"The low incidence of the carcinoma of the stump of the cervix in cases in which subtotal hysterectomy was done at the clinic may be attributed to the frequency with which, for many years, the technique of cupping or coning out the cervix from above has been employed, thus removing all the cervical canal." I believe this technique and these results can be paralleled in this city.

Charles William Hennington of Johns Hopkins and Umbert Cimildora of Cornell University reviewed 1,667 cases of reported cancer of the remaining cervix after subtotal hysterectomy. Of these, 197 were found in studies of 7,755 cases of cancer of the cervix, or 2.54 per cent of the cervical cancer was found to be of the cervical stump, and 107 occurred following hysterectomies for all conditions in 18,712 or an incidence of cervical stump cancer of .57 per cent. How many questionably benign conditions, fundal cancers, hydatid moles, or chorioepithelioma included in this group is not reported.

Greenhill feels that there is no conclusive proof that carcinoma occurs more often in the cervical stump following subtotal hysterectomy than in the cervix of women at large, and a study of the literature gives me the same feeling. In other words, the removal of the body of the uterus does not seem to predispose to carcinoma of the cervix.

This .57 per cent is the most logically arrived at figure that I have been able to find taken from a large number of cases, but since they followed hysterectomies done for all causes, this figure is naturally high; however, since there are those who feel that carcinoma develops in one per cent of the cervical stumps, let us assume that they have the correct figure. Now, about twenty-five per cent of the stump cancers make their appearance within the first year following operation and are assumed by most writers to be present and overlooked at the time of operation. They should be charged to diagnostic error and not to the type of operation, since we are concerned here only with hysterectomies for benign conditions. There is where a complete study and a high degree of surgical judgment is needed in surgery on the uterus. The first two years following the operation account for fifty per cent of the cervical stump cancer, the other fifty per cent being distributed through the next twenty-eight years.

Now, if we assume that one per cent of the cervical stumps develop cancers, in spite of a more accurate figure pointing to a much lower percentage, since twenty-five per cent of them are present at the time of operation and are chargeable to diagnostic error, there is then only .75 per cent developing after operation. If all of these women go ahead and die of carcinoma of the cervix, we still have 250 live women out of 100,000 operations that would have been dead if total hysterectomy had been done and seventy-five per cent of the others living from two to thirty years. Furthermore, a considerable number of carcinomas of the vaginal vault developing in the scar following total hysterectomy has been reported.

The records fail to reveal, nor do observations convince, that the cervical stump that develops cancer has had proper and adequate treatment in effort to clear up the infection and prevent its becoming cancerous. There is no other place in the human body where a surgeon will take out a part of the pathology and trust that nature will cure the remaining part. That the advocates of routine total hysterectomy are doing just this is established by their own words when they give the evils of an infected cervical stump as an argument for the total removal. No infected cervix should be left behind and forgotten. The infection should be cleared up by the recognized methods of treatment: cauterization, coagulation, conization, etc., either preoperatively, at the operation, or postoperatively, and this woman should be given the same advantage of frequent and regular examinations that other women of her age are entitled to. The records show that the occurrence of carcinoma of the cervix or cervical stump that has been treated and kept free from infection and irritative discharge is indeed rare, if not imaginary.

Other points that are generally discussed in connection with this question are of relatively minor importance since they are dependent largely upon lack of operative skill, and no surgeon should do a job that he cannot do well. However, it is generally agreed that total hysterectomy is a much more technical and dangerous operation than subtotal, exacting of the operator a much higher degree of operative skill or of the bag of accidents, a much greater toll. The two operations done equally well, and void of accidents, will not give much difference in morbidity, and, after all, an added degree of temperature elevation for forty-eight hours or a couple of added days in bed are of no special importance when we are figuring results. The disability or partial disability, as a result of an infected cervical stump, joins hands with a carcinoma that develops in an infected cervical stump, and they stand out as an impressive monument to the surgeon's inefficiency, or carelessness, or both.

Another argument that is offered by some in favor of saving the cervix is the assertion that total hysterectomy robs the woman of the fullness of sex life. Dannerluther states that if a careful inquiry is made of each patient who has been subjected to total hysterectomy, irrespective of who did the operation, the almost invariable confession of sexual impairment or unpleasantness becomes a forceful argument in favor of cervical retention. There are those who deny that this is true; however, it is true in a certain number of the cases, and it is a factor to be considered, especially in the woman of the sex active age.

And the controversy is still not settled. The question remains: What shall I do with this cervix? As I, personally, see it, the answer depends in a great number of the cases on whether one is interested primarily in preventing possibilities of cancer, or whether his primary interest is in saving the woman's life and restoring her as nearly as possible to normal. Since I would rather have a couple of carcinomas of the cervical stump develop, say one in three years, and one in fifteen, than to have half a dozen women die before leaving the hospital, my rule is, until I see reason to change:

1. Take out the badly lacerated and cystic degenerative cervix, the cervix that I feel sure cannot be cleared up.

2. Take out the questionably benign cervix.

3. Take out the cervix with a fibroid so low that they have to remain together.

4. Leave the other cervices in and make it a part of my business to clear up the infection and keep them inspected and well, ever bearing in mind that the only cervix that cannot become cancerous is the one that is out, and the only woman who cannot develop cancer is the one who is dead.

Conclusion

1. A study of the literature has been made and 122,359 reported hysterectomies from benign conditions have been compiled.

2. It has been shown that in the larger gynecological clinics one-third of the hysterectomies are totals and two-thirds subtotals, and that in these clinics the average mortality from total hysterectomy is 3.3 per cent and that for subtotal is 2.29 per cent.

3. It has been shown that carcinoma develops in less than one per cent of the cervical stumps, that it is no more frequent in the cervical stump than in the cervices where the fundus has not been removed, that the consensus of opinion is that carcinoma seldom, if ever, develops in a cervix or cervical stump that has been kept clear from infection, and that the mortality from subtotal hysterectomy, plus the mortality from carcinoma of the cervical stump, is less than the mortality from total hysterectomy alone.

4. It has been shown that twenty-five per cent of the carcinomas of the cervical stump are present at the time of operation and are not diagnosed.

5. I think that it has been shown that we should work up our cases and make an accurate diagnosis and let our decision be determined by the facts.

ACUTE INVERSION OF THE UTERUS WITH PROLAPSE: CASE REPORT

JEROME P. LONG, JR., A.B., M.D., F.A.C.S., Memphis

Inversion of the uterus has been described as a condition in which the uterus is turned inside out and upside down. It is usually found in the puerperium, but occasional cases have been reported where it has occurred in a nonpregnant patient. These latter cases are usually associated with uterine tumors, sarcomas being the most frequent tumor to cause inversion, and this is followed in order by myomata and carcinoma of the fundus. H. A. Ridler of Australia in 1934 reported an inverted uterus, caused by a fibroid tumor in a woman fifty-three years of age, who had had six children, with recovery following supravaginal hysterectomy with removal of the tumor and uterus from below.

Fortunately this condition is very rarely seen. The statistics vary according to the location, and to the authority who compiles them. New York Lying-In Hospital reports an average of about one in every 4,000 cases of pregnancy. In Dublin, Ireland, it averages one in every 123,000 cases, and one authority reported that it was such a rare condition that it was only seen once in every 4,000 cases. This variation in statistics is no doubt due largely to the fact that mild cases of inversion are not recognized and are not reported. In a survey around Toledo, Ohio, six cases are found which have never been reported.

Although this is a condition which has been recognized since the earliest time, Hippocrates having written about it, there is still much work to be done as to the etiology factors which bring it about. In the chronic nonpuerperal type it can only be caused by tumors. In the puerperal type it has long been recognized that trauma, such as too much pressure from above or too much traction on the umbilical cord, or even falls, is a very important factor in causing inversion of the uterus. Another very important factor is relaxation of at least the lower segment of the uterus and the cervix, complete relaxation of the uterus not being essential. Kellogg and O. A. Gordon, Jr., have definitely shown that a fundal insertion of the placenta with a thinning out of the uterine wall and a destruction of some of the myometrium by the placental tissue play a large part in acute puerperal inversion of the uterus. About one-third of these cases occur spontaneously, being started by increased abdominal pressure, pressure of a tumor on the fundus, or even the weight of the intestines, and being completed by uterine contraction, which brings about inversion in the same manner that the uterus would contract in an endeavor to expel a foreign body. Inversion of the uterus is more often seen in primiparas than in multiparas, probably because a fundal insertion of the placenta is more frequent in the former. (Matthews claimed that pituitrin before the expulsion of the placenta and overdoses of oxytoxics are also important etiological factors in this condition.)

Inversion of the uterus has for a long time been classified as acute or chronic, the acute type being any case which is recognized prior to one month following delivery and the chronic classification being used for those cases which are seen later. F. S. Kellogg, in 1929, offered a new classification which is more definite and more beneficial in regard to the treatment, which should be used. He divided cases of inverted uteri into acute, subacute, and chronic. The acute cases were ones which are seen before the cervical ring formation has occurred. He figured that this would occur in about forty-eight hours, although it frequently is seen sooner. The subacute cases are those in which the cervical ring formation has occurred and that are less than a month post partum. The chronic type are the cases of over a month's duration. Another classification, which is frequently seen, refers to the degree of the inversion rather than its duration. It is considered complete when the fundus of the uterus is outside of the pelvis, and incomplete when it is still within the pelvic cavity. There are five different degrees of inversion: the first degree, when

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*From the Department of Obstetrics, University of Tennessee School of Medicine.

there is only a slight indentation of the fundus; second degree, when the fundus is on the level of the internal os; third degree, when the fundus is on the level of the external os; fourth degree, when the uterus is completely inverted, but still lies within the vagina; and the fifth degree, when the uterus and the vagina are prolapsed outside of the body.

Symptoms of inversion vary greatly according to each patient. There may be practically no symptoms, and the inversion is picked up on examination. Or the woman may complain of mild low abdominal pain, or a feeling of heaviness in this region with irregular and, more or less, profuse hemorrhage. In the severer type of cases there may be a severe low abdominal pain, profuse hemorrhage, marked shock, and frequently death. On examination the patient will present, more or less, signs of hemorrhage and shock. Abdominally, a cup-shaped depression can be felt in the fundus, or no uterus is found in the abdominal cavity. On pelvic examination the uterus is felt as a rounded, soft, bleeding mass protruding into the vagina or through the vulva into the external world.

The mortality of these cases ranges anywhere between fourteen per cent and twenty-five per cent, depending to a large extent upon the degree of the inversion and the treatment which is used. In cases in which shock and hemorrhage are treated immediately, and which are otherwise left alone until these conditions have been corrected, and involution of the uterus has occurred, the mortality is as low as six per cent. The inverted uterus is a very fertile field for infection, and in cases which do become infected the mortality is much higher. The contraction ring of the cervix frequently reduces the blood supply to the uterus with the result that gangrene occurs, and in these cases the mortality is almost 100 per cent.

Kellogg has advocated various treatments to be used for different stages of inversion. In the acute stage a manual reposition may be attempted. In the subacute stage he advises abdominal operation for the replacement, and for the chronic type the Spinelli type of operation from below. There are over twelve different types of operations which have been devised for this condition. The Spinelli type, which is anterior colpohysterotomy, is the widest used in cases of chronic inversion. B. C. Hirst has advocated a posterior incision of the constriction ring from below, and there are also various types of abdominal operations. T. G. Thomas, in 1869, reported the earliest abdominal operation for this condition which is on record. He reduced an inversion of the uterus by opening the abdomen and dilating the contraction ring with a metal dilator. Since that time there have been numerous abdominal operations advised, the Haultain probably being the best. In this type of operation an incision is made through the posterior portion of the constriction ring for a distance of four to ten centimeters and the uterus is replaced by pressure from below. The advantages of the Haultain operation are: it is simple; it can be done very rapidly; usually there is a small amount of hemorrhage; and there is a very small degree of damage done to the uterus, which is especially advantageous in women of the child-bearing age. It is contraindicated in cases which are infected. In infected cases the patient should be treated symptomatically, and if there is no improvement, a vaginal hysterectomy should be done. In all cases of gangrene a vaginal hysterectomy should be done without delay. In some cases of chronic inversion, by elevating the foot of the bed and hot vaginal douches, spontaneous correction may be obtained. In other cases of this type various repositories have been devised, which are more or less successful. If the uterus is not rapidly replaced by them, a Spinelli type of operation is advised. Needless to say, all of these patients should be treated immediately on diagnosing the condition by a sedative, such as morphine, lead, fluids, cardiac stimulants, and blood transfusions. Also the hemorrhage should be controlled by hot packs.

Case Report

I. B., colored; age 19; gravida, 2; para, 2; clinic case; Kahn, negative.

The patient's prenatal course was uneventful, her blood pressure, urine, and weight gain being normal during this time. The patient had a normal spontaneous delivery in the home, and the placenta was retained for half an hour with no abnormal bleeding. At this time a Crede expulsion was attempted without success. Fifty-five minutes after the end of the second stage another Crede method of expulsion of the placenta was attempted, and this was immediately followed by a complete inversion of the uterus with profuse hemorrhage, without the placenta becoming separated. The patient immediately went into profound shock, and her pulse became very rapid and weak. An ambulance was called, and she was in the John Gaston Hospital within thirty-six minutes after the inversion had occurred. At that time she was noted to be an extremis; she was very pallid, skin was cold, pulse and blood pressure were unobtainable, and her respirations were very rapid and shallow. The foot of the table was elevated, she was given caffein, adrenalin, and metrazol, and glucose was given intravenously, but difficulty was experienced in getting into the veins because of their collapsed condition. The patient's condition became rapidly worse, and an unsuccessful attempt was made to replace the uterus after removing the placenta. After removal of the placenta there was practically no bleeding because of the exsanguinated condition of the patient. Forty minutes after admission to the hospital her respiration stopped, and no heartbeat could be elicited, although there was some question as to a radial pulse. Fifteen minutes later the patient was pronounced dead, and the uterus was removed post mortem.

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H. H. SHOULDERS, M.D., Editor and Secretary

APRIL, 1942

EDITORIAL

COMMUNICATION FROM THE PRESIDENT

To the Members of the Tennessee State Medical Association:

I wish to express a word of greeting to every member of the Tennessee State Medical Association and to express the sincere hope that everyone who can will attend the meeting which takes place in Memphis, April 14, 15, 16.

I now feel more than ever before that the Tennessee State Medical Association is one of the best state organizations in the nation.

Our profession is being called upon as never before for service and sacrifice.

Our task in this emergency is great. We must meet the needs of the military establishment. We must also meet the needs of the civilian population. Each must find his place of service. Each will make whatever sacrifice is necessary to accomplish victory.

It will do all of us good to come together and discuss these problems and to hear them discussed by men who can speak with authority.

Most respectfully,
HIRAM A. LAWS, JR.,
President, Tennessee State Medical Association.

THE STATE MEETING

The April issue of the JOURNAL is being completed and mailed in advance of the usual date (the fifteenth of the month) because the annual meeting of the Association takes place in Memphis, April 14, 15, and 16.

There are several reasons why every doctor who can should attend the annual session of the Association.

Many scientific subjects of immediate interest to the profession will be discussed by people in a position to speak with authority. All recognize the necessity for keeping informed and abreast of the times.

The subject of medical military preparedness will be featured at the meeting.

The House of Delegates will give consideration to matters of policy and business which have to do with the functioning of the organization. Every member should be interested in these matters.

There will be a large display of commercial exhibits. All recognize the vital part which commercial concerns play in the promotion of better medical care. By them books are produced. New drugs are developed and produced. New instruments are produced. All of which add up to better medical care.

There is something else of value to be had. We will call it inspiration. By contacts at these meetings doctors are inspired to make more diligent efforts. All who attend will agree that such values can hardly be overestimated.

One can look around just a bit and note a marked difference between the man who attends medical society meetings and the man who does not. The difference is apparent. You cannot afford to miss this meeting.

A NOTE ON PROCUREMENT AND ASSIGNMENT

On another page of this issue of the JOURNAL under News Notes and Comments will be found a statement by Lieutenant Colonel Sam F. Seeley of the Procurement and Assignment Service, Washington, D. C., with reference to the requirements of the Army and Navy between now and December 1, 1942. It is a relatively large order.

It is suggested that every reader give attention to this particular statement.

TENTATIVE PROGRAM
OF THE
ANNUAL MEETING OF WOMAN'S AUXILIARY
TO THE
TENNESSEE STATE MEDICAL ASSOCIATION

April 14, 15, 16, 1942

WOMAN'S AUXILIARY TO THE MEMPHIS AND SHELBY COUNTY MEDICAL SOCIETY HOSTESSES

Mrs. Clyde Croswell, President
and
Past State Presidents from Memphis:
Mrs. W. H. Gragg
Mrs. Willis C. Campbell
Mrs. W. T. Black
Mrs. W. T. Braun

GENERAL COMMITTEE

Mrs. Harry C. Schmeisser, Chairman
Mrs. John J. Shea, Cochairman
Mrs. Carrol Turner, Cochairman

HOTEL PEABODY
Memphis, Tenn.
Tuesday, April 14
10:00 A.M.
REGISTRATION

Mrs. E. M. Holder, Chairman
Cochairmen
Mrs. J. F. Fraser
Mrs. W. D. Mims
Mrs. Tom Mitchell
Mrs. Ernest Kelly
Mrs. Harwell Wilson
Mrs. Thomas D. Moore

TRANSPORTATION

Mrs. H. D. Gray

2:00 P.M.
PRE-CONVENTION BOARD MEETING

Mrs. W. W. Potter, Presiding
Assembly Room

5:00 TO 7:00 P.M.
TEA

Woman's Auxiliary to the Memphis and Shelby County Medical Society, Hostess.
At the home of Dr. and Mrs. Harry C. Schmeisser, Walnut Grove Road.

Wednesday, April 15
9:30 A.M.
REGULAR ANNUAL MEETING OF THE WOMAN'S AUXILIARY TO THE TENNESSEE STATE MEDICAL ASSOCIATION

Mrs. W. W. Potter, Presiding
Invocation.
Song, "America, the Beautiful"—Mrs. Charles D. Blassingame.
Address of Welcome—Mrs. Thomas Nelson Coppedge.
In Memoriam.
Report of Convention Chairman—Mrs. Harry Schmeisser.
Presentation of the Advisory Council.
Dr. B. F. Byrd, Chairman, Nashville.
Dr. Jesse Hill, Knoxville.
Dr. W. T. Braun, Memphis.
Address—Dr. Hiram A. Laws, President, Tennessee State Medical Association.
Report of Credentials and Registration Committee
Roll Call—Mrs. Arthur R. Porter, Jr., Secretary.
Report of Woman's Auxiliary, American Medical Association.
Report of Woman's Auxiliary, Southern Medical Association.
Presenting Guests.
Reading of the Minutes.
Treasurer's Report.
Report of County Presidents.
Report of Chairmen of Standing Committees.
Report of State Officers.
Report of the Historian.
Unfinished Business.
New Business.
Announcements.
Report of the Nominating Committee.
Election of Officers.
Reading of the Minutes.

1:00 P.M.
LUNCHEON

Mrs. Chester D. Allen, Chairman
Mrs. W. A. Ruch, Cochairman
Invocation—Mrs. Jewell Dorris.
Presentation of the National Officers.
Guest Speaker—Mrs. R. E. Mosiman, President of the Woman's Auxiliary to the American Medical Association.

3:00 P.M.
POST-CONVENTION BOARD MEETING

Mrs. J. D. Lester, Presiding
Assembly Room

7:00 P.M.
ANNUAL STATE BANQUET, HOTEL PEABODY

Mrs. W. C. Chaney, Chairman
Invocation.
Guest Speaker.
Report of the Courtesy Committee.
Awarding the Cups.
Report of Essay Contest.
President's Message.
Installation of Officers.
Announcements by the New President—Mrs. J. D. Lester.

RESOLUTIONS

Resolution and Tribute to Dr. B. C. Hale

Dr. B. C. Hale was born January 5, 1887, at Rising Fawn, Georgia. He received his early education in Rising Fawn.

In 1909 he graduated from Chattanooga Medical College, after which he interned at Erlanger Hospital for one year.

Doctor Hale began active practice in 1910 at Hales Bar Lock and Dam, Guild, Tennessee, where he practiced until February, 1912, when he took pneumonia and was unable to practice the remainder of 1912 or the first part of 1913 except as an assistant in the office of Doctor Middleton at Rising Fawn, Georgia.

Having regained his health, he opened an office in Ringgold, Georgia, September, 1913, and did an active practice there. He married Miss Willie Guy of Eden, Alabama, who survives him, on December 3, 1913.

In 1921 he moved to Rossville, Georgia, and established an office there; later he also established an office in Chattanooga, where he was associated with Doctors Holtzclaw, E. C. Anderson, E. C. Johnston, and George Vassey.

He was president of the Seventh Congressional District Medical Society of Georgia in 1941, and was a member of Georgia State Medical Association, Walker County Medical Association, and the American Medical Association.

Doctor Hale died suddenly on the morning of February 25, 1942. He had a charming personality and was liked by his fellow practitioners and will be greatly missed by all.

Therefore Be It Resolved, That the Chattanooga and Hamilton County Medical Society deeply deplore the passing of Dr. B. C. Hale.

Be It Further Resolved, That we extend to his bereaved widow our sincere sympathy and condolence, and that a copy of these resolutions and preamble be spread on the minutes of our Chattanooga and Hamilton County Medical Association, and that a copy be sent the family and the TENNESSEE STATE JOURNAL and the *Journal of the Southern Medical Association.*

G. VICTOR WILLIAMS, M.D., *Chmn.*
J. TOM CURREY, M.D.
O. C. GASS, M.D.
E. A. GILBERT, M.D.
JOHN W. HOCKER, M.D.
EDWARD T. NEWELL, JR., M.D.
CLARENCE SHAW, M.D.
J. B. MCGHEE, M.D.

NASHVILLE ACADEMY OF MEDICINE AND DAVIDSON COUNTY MEDICAL SOCIETY

ADAM GILLESPIE NICHOL, M.D.

Words, with all their connotations, are but empty sounds when uttered by a friend confronted by the loss of a friend. And this effort is rendered all the more futile when applied to one with whom there has been a long and intimate association. Propinquity narrows perspective, as it also often brings into bold relief intimate qualities unnoticed by the casual acquaintance; and, more often than not, these hidden and obscure attributes tell the real worth of a man.

Rendered motherless by her death a few days after his birth on July 11, 1876, Adam Gillespie Nichol was nurtured and cared for from this tender infancy to early manhood, with all the consideration and solicitude accorded her own children, by his aunt, Mrs. Jennie Gillespie Ramage. His father watched over him and provided for him with all that parental pride and devotion which can only be bestowed by a father of an infant who has been deprived of that greatest earthly heritage—mother. Yet all of these attentions did not reach the extremes of overindulgence, for the vacation periods of his early education found him working as an errand boy and clerk in his uncle's store.

Doctor Nichol's early education was received largely in private schools, principally in the famed Bingham School of North Carolina. After his graduation from the Medical Department of the University of Nashville in 1898, he became the assistant of Dr. Charles Brower, and in the following scholastic year began his teaching career in his Alma Mater in the role of assistant demonstrator of anatomy and quiz master to the chair of surgery. In 1914 he spent several months in postgraduate work in the Hospital for Ruptured and Crippled in New York City, and began the teaching of orthopedic surgery. Thus he became among the first to specialize in orthopedics in this section of the country. With his attention focused on this specialty, he became intensely interested in the crippled child, and it was greatly through his untiring efforts and zeal that the nucleus of the present Junior League Home for Crippled Children was formed. It was largely through his efforts that the Children's Building of the Davidson County Tuberculosis Hospital was erected. He assisted in every way at his command the crippled children's movement of the Nobles of the Mystic Shrine, and, together with other leaders of that organization, he attempted to have located in this community one of their many hospitals.

But of all the professional and civic enterprises with which he was connected, the Davidson County Tuberculosis Hospital was nearest his heart. He gave unstintingly of his time and talents to that institution for more than a quarter of a century. But his attitude toward it was more than a member and an officer of the board; rather, it was an intimate relationship in which he took a personal interest. He witnessed with pardonable pride the steady progress of its scientific achievements and its increasing service to the community.

Following the death of his wife, Bertha Cheek Nichol, in 1936, Doctor Nichol practically retired from the active practice of medicine. The void occasioned by her death, to whom he was unselfishly devoted, was filled as well as might be by his affection for his only child and grandchildren, together with the happy association among a few friends, tried and true.

However, he retained his membership in this academy as well as the Clinical Orthopedic Society and the American Academy of Orthopedic Surgeons.

Adam Nichol was not a popular man in the superficial and usually accepted sense. His pronounced virtue of honesty—honesty in the moral and spiritual values as well as in professional and business relationships, together with his freedom from guile and his frankness of speech, made this impossible. He seemed to unconsciously sense the injunction: "Woe unto you, when all men shall speak well of you!"

For him the bells have tolled; he rests in the sleep of peace.

J. F. GALLAGHER, M.D.

ROBERT BOYD BOGLE, D.D.S., M.D.

Dr. Robert Boyd Bogle, Doctor of Medicine, Doctor of Dental Surgery, and Fellow of the American College of Dentists, died of coronary thrombosis at his home in Nashville, Tennessee, Sunday morning, May 25, 1941, after an illness of nearly nine years. Thus ended the career of one of Tennessee's most brilliant and honored sons. Few men are privileged to attain the heights reached by him.

He was born at Midland, Tennessee, March 22, 1875. He received his education at the Winchester Normal College, Vanderbilt University, where he earned the degree of Doctor of Medicine in 1894, and at Northwestern University, where he graduated with the degree of Doctor of Dental Surgery in 1895.

He came to Nashville soon after finishing school and engaged in the practice of general dentistry. He had not been here long before he became a member of the faculty of the University of Tennessee School of Dentistry.

His unusual energy and skill soon marked him as a leader in his profession. After twenty-three years in general practice, he limited his work to radiography, exodontia, oral surgery, and consultation.

The esteem and confidence of his colleagues in dentistry and other fields of endeavor are amply indicated by the many posts of honor which they bestowed upon him. He was president of the American Dental Association in 1930. He also was president of the Tennessee State Dental Association in 1904; past president of the Fifth District Dental Society, Nashville; professor of exodontia, radiography, and oral surgery at Vanderbilt University School of Dentistry for twenty-seven years, the last six of which he served as dean; member of the Nashville Academy of Medicine; Tennessee State Medical Association; fellow of the American Medical Association; fellow of the American College of Dentists; and charter member of the American Society of Exodontists and Oral Surgeons. During the World War he was a member of the Medical Advisory Board No. 3 of Nashville. He was an honorary member of the Alabama, Arkansas, Mississippi, North Carolina, and South Carolina State Dental Associations, and a life member of the Maryland State Dental Association.

He was a member of the staff and oral surgeon to Vanderbilt, St. Thomas, Baptist, and Protestant Hospitals of Nashville. He also was a member of the Phi Kappa Sigma, Psi Omega fraternities, and the Omicron Kappa Upsilon honorary fraternity. He was a Mason and a member of the Shrine and Jesters, in which organizations he was quite active. He was a member of the board of directors of the Nashville Automobile Club for several years, during which time he was instrumental in the passage of legislation for the benefit of motorists.

It is the belief of many that his work as dean and teacher in the Vanderbilt School of Dentistry was his outstanding contribution. It was his personality, to a marked extent, that kept this institution in its position among the leaders, and his memory is cherished by the many alumni who came under his influence there.

He was greatly interested in the underprivileged and unfortunate, and gave them unstintedly of both his time and substance. His work with the various charitable organizations of Nashville is well known.

He was a Presbyterian by faith, and had been affiliated with the Russell Street Presbyterian Church during his entire residence in Nashville.

Doctor Bogle loved his friends with deep sincerity. He was never too busy to lend a helping hand to one of them; and possessing a keen sense of humor, he was not averse to moments of levity with them. The many fortunate ones who enjoyed the privilege of his home were inspired by his quiet devotion as a husband and father, and the comradeship displayed there. He possessed the serene, simple dignity that so becomes a great man.

The world of science has lost one of its most valuable leaders; his community a great humanitarian; and his friends, who loved him and cherish his memory, lament his death.

HOLLIS E. JOHNSON, M.D.

ALBERT WYNNE HARRIS, M.D.

In the various reactions of a body of professional men to the death of one of their group, I take it that the one of most meaning is the sense of loss sustained by that profession. Did the one that has passed represent the best? Did he love his work? Did he serve the people who came under his care with such unselfish devotion, such eagerness to know the truth, and to put that truth into practice as to arouse the admiration and envy of his associates and successors? No higher tribute can be paid to such a one than to feel that the group is not just the same as before his departure. As a corollary to such an attitude, to such a sense of loss, comes the query, "Do we stand ready to do our part in making up for the loss our profession has sustained? Do we stand the test of devoted and ethical service represented by the one who has gone?"

The death of Dr. A. W. Harris has brought this sense of loss to our minds many times. With the least possible desire to push himself, in the ordinary use of that word, with the greatest possible desire to serve those who put themselves under his care, he has set for us an example we should emulate, and his passing has made a void in our ranks that we should strive—however ineffectually—to fill. We can render his memory no greater compliment and our profession no greater service.

W. H. WITT, M.D.

LEONARD F. POGUE, D.D.S.

On February 18, 1942, the Nashville Academy of Medicine lost one of its outstanding members in the tragic and untimely death of Dr. Leonard F. Pogue.

Doctor Pogue was born in Obion County and moved at an early age to Nashville, where he received his education. He attended the School of Dentistry of Vanderbilt University, graduating in 1923. He was an outstanding student, and following his graduation he was retained as an instructor in the School of Dentistry for two years.

He then was engaged in the practice of general dentistry in Nashville for several years, after which he elected to specialize in orthodontia. He qualified himself thoroughly by taking postgraduate work in orthodontia and returned to Nashville, where he had been actively engaged in the practice of his specialty until his death.

Early in his practice he established himself as a leader in his profession and recently was instrumental in establishing the courses of postgraduate instruction of the State Dental Society, serving since its beginning as chairman of the Committee of Postgraduate Instruction.

Doctor Pogue was an active member of the Vine Street Christian Church, the Nashville Rotary Club, the Fifth District Dental Society, the American Dental Society, and a fellow in the International College of Dentistry. In as much as he took such an active part in each organization, his passing is a great loss.

Tonight we pay tribute to all the fine qualities he manifested, to his profession, to his community, and to his family. It was a privilege to have been associated with one who had such an outstanding capacity for intense, loyal, and personal friendship.

His death is a great loss to our community and to our profession.

To his wife and to his children, we extend our deepest sympathy.

JAS. C. GARDNER, M.D.

NEWS NOTES AND COMMENTS

Physicians interested in acquiring additional obstetrical prenatal cards designed by Dr. Frank Whitacre can secure a new supply from the postgraduate educational booth at the state meeting in Memphis, placed there through the kindness of McQuiddy Printing Company, Nashville, at the rate of $2.00 per 100 cards.

BLOOD COLLECTIONS FOR ARMY AND NAVY REPORTED AT INCREASING RATE

With 30,477 blood donations being reported for the first two weeks in March by Red Cross chapters maintaining donor centers, the program for supplying blood plasma to the armed forces has entered its second year of operation with an excellent start. Inaugurated in February, 1941, at the request of the surgeons general of the Army and Navy, this project has expanded as rapidly as laboratory facilities to process plasma have become available. Donor centers are now operating in eighteen cities.

Shortly after the beginning of the project the Red Cross was requested to deliver 215,000 units of plasma by July, 1942. Following Pearl Harbor, this figure was upped by 165,000 units, bringing the total number to be delivered by July, 1942, to 380,000. For the year beginning July 1, 1942, the Army and Navy have requested the Red Cross to obtain an additional 550,000 units, making a minimum total of 930,000 units. To provide this total will require somewhat in excess of 1,000,000 donors, it is estimated.

According to a report covering the first year of operation, issued by Dr. G. Canby Robinson, national director of the Red Cross Blood Donor Service, by the end of November, 1941, the Red Cross blood donor centers then participating in the program had collected and delivered to processing laboratories a total of 27,352 donations. Then came Pearl Harbor and the opening of additional donor centers. Immediately after, enrollment of donors jumped by leaps and bounds. Whereas in the ten prior months 27,000 blood donations had been given the number of donations during December was 18,396. In January this figure was doubled, 37,109 donations being made. Collections in February, the shortest month in the year, totaled 53,780, and with the first two weeks in March reporting at a monthly rate of approximately 65,000, there is every prospect that the goals that have been set will be reached. However, the present rate of donations will have to be maintained without letup, and may even have to be increased further, as there is the probability that additional amounts will be requested by the Army and Navy.

Red Cross blood donor centers are now in operation in the following cities: New York, Philadelphia, Baltimore, Buffalo, Rochester, N. Y., Indianapolis, Detroit, Pittsburgh, St. Louis, Boston, Milwaukee, Cleveland, Chicago, San Francisco, Los Angeles, Cincinnati, Washington, D. C., and Brooklyn. The last-named center began operations in mid-March.

According to the report, seven commercial laboratories have contracts with the government for processing plasma on a cost basis. The total number of donations during the first year of operations aggregated 82,857, of which 55,505 were made in the nine weeks of December and January.

The value of blood plasma in the treatment of burns and wounds in combating shock was amply demonstrated at Pearl

Harbor. Surgeons on duty there during the attack and in the days following state in no uncertain terms that many lives were saved due to the use of plasma supplied to the armed forces by the local medical society, the American Red Cross, and other agencies.

With the simultaneous publication of the June issue of the *Annals of Surgery* in Philadelphia by the J. B. Lippincott Company, and in Buenos Aires by the Guillermo Kraft Company, a new step is being taken toward the consolidation of medical interests here and in South America. The *Annals of Surgery* is the oldest surgical journal in the English language. Its appearance now in Spanish will mark a high spot in the Lippincott Company's celebration of its sesquicentennial this year. As the result of negotiations and with the assistance of the coordinator of Inter-American Affairs, and Mr. Lewis Hanke, director of the Hispanic Foundation, Guillermo Kraft Company, one of the oldest and most respected publishing firms in Buenos Aires, will translate the *Annals of Surgery* each month for South American physicians and surgeons. The medical profession in this country has become increasingly aware of its obligations and responsibilities in South America. No better symbolic demonstration can be given of its sincere willingness to develop permanent intellectual fraternization between the surgeons of the two continents.

CONFERENCE ON MEDICAL SERVICE PLANS

The first Conference on Medical Service Plans was held in Chicago on February 14, 1942, at the headquarters of the American Medical Association and the Palmer House. A total of sixty-four persons were present, including representatives from operating and proposed medical service plans in seventeen states and officers of state and county medical societies.

Dr. Olin West, secretary and general manager of the American Medical Association, welcomed the representatives and stated: "You are distinctly a part of a great movement that is essential to the welfare of the people of this country, and it is highly desirable that you should get together to exchange information and opinions in order to arrive at a basic understanding of the problems involved."

Mr. J. D. Laux of Michigan Medical Service, who was elected chairman of the conference, indicated that interest in some form of prepayment for medical services has been moving along three well-defined fronts: (1) group clinic or consumer plans such as the Ross-Loos Clinic or the Transport Workers Medical Plan, of which there are seventeen such plans in operation with a total enrollment of 100,000 persons; (2) employee-employer mutual benefit associations (300 in operation) and the commercial insurance company plans (at least 250) providing cash indemnity benefits totaling $365,000,000 annually; and (3) nonprofit medical service plans sponsored by medical societies, of which there are thirty-three plans in operation in nine states with an enrollment in excess of 750,000 persons. The nonprofit medical society-sponsored programs are developing most rapidly and give the best promise of contributing toward a better distribution of medical service.

The entire day was devoted to consideration of the basic principles and major problems involved in medical service and limited surgical benefit programs sponsored by medical societies. The following are some particularly pertinent points brought out in the discussion:

Contract practice plans limiting service to a small number of physicians cannot provide a satisfactory service for an entire community. Nonprofit community-wide or state-wide service plans are the proper type of organization for prepayment of medical services.

The statement that voluntary plans lead to compulsory insurance applies to the chaotic situation created by a multiplicity of lay-controlled or commercial plans, not to medically-sponsored community programs.

In medical society-sponsored programs, the contribution of the profession is the offering of services without additional charge to persons in the under-income group. Under a plan providing cash indemnity, the only thing the medical profession furnishes—service protection to the individual—would be taken away.

Experiments in the full-coverage type of medical service plan are being undertaken to determine the effect of such plans on the private practice of medicine; how such plans affect the physician-patient relationship; what problems arise in connection with the practice of specialists; the difference between urban, rural, and metropolitan practice; and all general problems relating to medical care.

A differential arrangement for specialists is a problem which one medical service plan treats in the following manner: When a subscriber uses a specialist as his family physician, the specialist receives general practitioner fees for such service. However, in the event the subscriber is referred to a specialist by his family physician for special services, an increased fee is paid. To be eligible for increased fees, the specialist must confine himself strictly to his specialty.

Enrollment based on individual physical examinations does not furnish as good selection as group enrollment.

The desirability of establishing somewhat uniform or model legislation for medical service plans was emphasized.

The question of the extent of joint operations with hospital service plans and the appropriate basis for cooperation led to the establishment of a committee to meet with a committee from the hospital service plans.

It is of utmost importance to establish a centralized agency for the collection and dissemination of information. R. G. Leland, M.D., director of the Bureau of Medical Economics of the American Medical Association, outlined a program of coordination through establishment of a glossary of terminology, an organizational outline of the plans, and a composite tabulation of financial and statistical reports.

The conference concluded with the appointment of a committee to determine the best method of establishment of a permanent organization of medical service plans throughout the country.

EXCERPTS FROM SPEECH OF S. F. SEELEY, M.D.

[*Lieutenant Colonel, M. C., U. S. Army, Executive Officer, Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, Washington, D. C. Before Medical Society of the County of New York, New York Academy of Medicine, Monday Evening, March 23, 1942. Public Relations Bureau, Medical Society of the State of New York, 292 Madison Avenue, New York City.*]

Every physician, veterinarian, and dentist in the United States will receive, the first week in April, a questionnaire from the Procurement and Assignment Service. This is designed to give an opportunity to the 270,000 persons in these services to state their preference should they be called, whether in military, governmental, industrial, or civil activity.

Previously, the American Medical Association and the American Dental Association, upon request of the surgeons general of the Army and Navy, at the expense of these associations, created a register of their professions, with complete data concerning each member on punch cards. Too much credit cannot be given these organizations for the work they did long before war was declared in compiling information and rendering it available, if and when the emergency should become acute. Now we are at war. A copy of all this information is now in the hands of the Procurement and Assignment Service for the compilation of a complete national roster on punch cards.

The status of every man in the United States has changed since Pearl Harbor. Selection of doctors, dentists, and veterinarians is to be on a voluntary basis as much as possible. An indication of the response to be expected from the query to go out April 1 is found in the fact that the American Medical Association's questionnaire twenty-two months ago elicited a reply from more than 159,000 physicians of the country, of whom more than fifty per cent were willing to volunteer for medical service in case of war. Of the 62,000 under the age of forty-five, sixty-three per cent of the single ones, forty-eight per cent of the married, even at that early date before war seemed probable, twenty-two months ago, were willing to offer their services. It is expected that the new questionnaire, which asks for further information as to the type of service preferred now that we are at war, will elicit a tremendous response.

Many physicians are specially interested in aviation medicine. Information blanks may be procured from the office of the air surgeon, Army Air Forces, Washington, D. C. Last week my office received a request for 2,500 medical officers for service with the air corps by July 1, and to provide 600 per month for the balance of the year. Of the men selected, eighty per cent must be under thirty-six, twenty per cent may be selected from the group between thirty-six and forty-five, if they are recognized specialists particularly in traumatic surgery, ophthalmology, or neuropsychiatry.

Every doctor in the country is asking these questions: How can I be of service? Where is the place my special experience will be most useful? To whom shall I apply? The answer to all these questions is that the Procurement and Assignment Service at Washington is the place to inquire, and the answer to the new questionnaire will be the first thing to do to participate in the rapid mobilization of the skilled health services.

For the first time in history there is now to be concentrated in one office the data on the availability of professional men to supply the needs of the Army, Navy, United States Public Health Service, United States Civil Service Commission, Veterans' Administration, United States Children's Bureau, physicians and dentists and veterinarians, and other government services. No service will commission or employ a person unless cleared by this Procurement and Assignment Service. This immense mobilization must be accomplished without the least jeopardy to the communities from which the men are taken. The Navy will need a total of 3,000 doctors when its enlistment of 500,000 is reached. For the Army, 16,000 new physicians must be supplied by December 1. We are sure there will be no difficulty in obtaining these officers on the voluntary basis without loss to civilian needs and the men chosen can be assured that use will be made of them in accordance with their special experience and training.

To explain how the service will operate when the information derived from our April questionnaire is added to that already supplied by the American Medical Association, let us assume a concrete instance. Suppose at eight o'clock in the morning my office gets a phone call from the surgeon general's office of the Navy. He wants fifty orthopedists with the following qualifications: male, citizenship for ten years if naturalized; age between thirty-seven and forty-five; graduate of medical school recognized by the Navy; served at least a year's internship in a hospital recognized by the Navy; training in his specialty sufficient to fit him to be a chief of service; already has expressed a willingness to accept a commission when the nation needs him; speaks or translates Spanish; and men with significant travel in South Pacific preferred.

Now that is an order, and we do not have to put 100 clerks at fifty filing cases to find our men. The national roster has a machine, and we have 180,000 cards with punch holes in them. A girl presses down a certain key for each one of these qualifications. The 180,000 cards are fed into the hopper. The punch holes on the cards mesh with the gear thrown in by the keys, and the cards keep dropping out because they do not fit, or keep on traveling to the next place where a notch fits, indicating the next requirement specified. The list can be broken down automatically into states if desired. Those that are left at the end are the very ones we seek. In the hopper we have, as the net result of the machine's work, the printed names and addresses of all those who meet these requirements.

One copy goes at once to the surgeon general's office. The other copy, broken down into states, is forwarded to the state chairmen of Procurement and Assignment to determine whether or not these men can be spared from their community at present. They will not be assigned to duty unless they can be replaced, if they are essentially needed on staffs of teaching institutions, industrial plants, hospital staffs, public health services, or in private practice. But it is expected that all such positions ultimately can be filled by men over forty-five, or those physically unfit for service under that age, and by women doctors, of whom the nation now has 8,000 in active practice.

More and more these women doctors are to take the places of men in important and essential positions in civil practice or in defense service not requiring active duty with troops. But until this is done, it is for the local state committees to pass on whether the person who is called can be spared. This job has been placed in the hands of the local medical profession to do. Col. Samuel J. Kopetzky in New York City will have charge of this work in New York state and Dr. Arthur Booth of Elmira, N. Y., is chairman of the committee for the Second Corps Area. They are to act as our consultants, and on their advice we hope to avoid summoning men whose dislocation would cause a critical shortage in the facilities of a local community.

The copy of the list of names and addresses which goes to the surgeon general's office will be used by him to get in touch with the orthopedists who have these special qualifications he desires. It is for him to contact these men, determine the rank each should receive in a commission, choosing them in consideration of his needs, which may include a great many factors which he will be able to determine on investigation of the men.

It should be more widely known that the medical, dental, and veterinary professions are responsible for providing us with the essential qualified men we need, and seeing to it that there is no disruption in civilian protection. These committeemen work without pay just as the doctors who have served in selective service work have worked without pay. The debt of the government and the people to these professions for their voluntary contribution to winning the war can only be paid in public recognition of what they have done.

Applications for commissions in the Navy should be made to the nearest Navy commandant of the area in which the physician lives.

Every dentist or veterinarian, regardless of age, sex, citizenship, school of graduation, military or civil status, or other consideration, and even if in process of being commissioned, should be sure to answer promptly the questionnaire which he will receive within two weeks. This is essential information which will assist materially in fitting him into the right place when the call for him comes, as his availability will have to be determined by the Procurement and Assignment Service, which is charged by the President with the duty of facilitating assignment while protecting the needs of the civilian population.

Every physician, dentist, and veterinarian in the United States who enrolls in the Procurement and Assignment Service will be given a certificate to hang on his wall and be authorized to wear an insignia on his lapel showing that he has offered his services in his professional capacity to his country to win the war.

Within a few weeks every citizen should be able to spot those in his own community who have thus volunteered. The man who stays at home because he cannot be spared is just as patriotic as the man in the armed forces, and he has the satisfaction of knowing that he was not called because his community needed him. He, too, will have the same certificate and the same insignia.

MEDICAL SOCIETIES

Davidson County:

March 17—Symposium: "Typhus Fever," by Dr. Stanley Teachout. Discussion by Drs. John J. Lentz, Dr. Robert Magruder, Dr. Edward L. Turner, and Dr. A. E. Keller.

"Pneumonia—Atypical," by Dr. Sam S. Riven. Discussion by Dr. O. N. Bryan.

March 24—"Peritonitis Treated with Drugs of the Sulfonamide Group," by Dr. M. B. Davis. Discussion by Dr. Barney Brooks and Dr. L. W. Edwards.

March 31—Annual Memorial. Dr. W. R. Cate, chairman of the Memorial Committee, presided. Tributes to four departed members of the academy were read: Dr. Robert Bogle, 1894-1941; Dr. Adam Gillespie

Nichol, 1876-1941; Dr. Albert Wynne Harris, 1878-1941; Dr. Leonard Franklin Pogue, 1900-1942.

Dr. King Vivion, pastor of the McKendree Methodist Church, Nashville, addressed the meeting.

April 7—"Vesical Neck—Obstruction," by Dr. Paul Morrissey. Discussion by Dr. E. H. Barksdale.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met in Waynesboro on March 31 with a very good attendance and a fine program. Dr. Charles F. Webb, Jackson, read a paper on "Surgical Diseases of the Abdomen—the Acute Manifestations."

Dr. C. B. Olin, Memphis, discussed "Peritoneoscopy."

O. H. WILLIAMS, M.D., *Secretary.*

Knox County:

March 10—"Venereal Disease Program," by Dr. H. H. Hudson. Discussed by Drs. Frank Faulkner and A. H. Lancaster.

March 17—"The Treatment of Chronic Empyema," by Dr. David Waterman.

March 24—"Important Points from a Few Mental Patients," by Dr. Jesse C. Hill. Discussion opened by Dr. B. F. Peterson.

"The Report of the Present Status of the Medical Civilian Defense Work," by Dr. Herbert Acuff.

March 31—"Urinary Calculi," by Dr. Tom R. Barry. Discussed by Drs. E. P. Nicely and W. S. Muse.

April 7—Dr. John Youmans of Nashville spoke on "Nutritional Diseases."

"Medicine Through the Roman Period," by Dr. Arch Carr. This is the first of a series of papers on medical history. Other papers scheduled to be read are as follows:

April 28—"From Rome to the Renaissance," by Dr. William Clark.

May 19—"The Renaissance," by Dr. Oliver Hill.

June 16—"Seventeenth Century," by Dr. Roy Fisher.

September 22—"The Age of Theory," by Dr. E. E. Miller.

October 13—"The Nineteenth Century," by Dr. Robert Layman.

November 10—"The Twentieth Century—Preventive Medicine," by Dr. W. H. Enneis.

OTHER MEDICAL SOCIETIES

The following resolutions were passed by the Southeastern Surgical Congress in Atlanta, Georgia, March 11, 1942, and telegraphed to President Franklin D. Roosevelt:

Whereas, Our nation is today involved in the most crucial war in its history to preserve liberty and the rights of democracy; and

Whereas, we appreciate in the fullest sense the urgent needs of our armed forces and of our allies; and

Whereas, we recognize with the deepest sense of duty the necessity of total mobilization of our entire abilities, our time, our facilities, and our resources to win the war.

Be It Resolved, That this assembly does hereby urge the President of the United States to adopt immediately all measures necessary to coordinate the efforts of all loyal citizens in this war effort; and

Be It Further Resolved, That in the interest of increased efficiency and the speeding of the day of ultimate victory, that short days, short weeks, and holidays be suspended, and, if necessary, that a seven-day program be inaugurated until after the war is won; and

Be It Further Resolved, That a copy of this resolution, pledging the support of the Southeastern Surgical Congress and each of its individual members, be wired immediately to Franklin D. Roosevelt, President of the United States and Commander in Chief of the Armed Forces.

X-RAY TECHNICIANS

The annual meeting of the Tennessee State Society of X-ray Technicians will be held at the Gayoso Hotel, Memphis, Tennessee, April 25, 26, 1942.

In addition to a well-prepared program, examinations for the American Registry will be held by Mr. Alfred B. Greene, B.Sc., R.T., Executive Secretary of the American Registry of X-ray Technicians.

All of the Radiologists of the state are invited to attend and to make it possible for their technicians to be present.

For full particulars and program, write Miss Katherine Douglas, R.T., Secretary, 326 Doctors Building, Nashville, Tennessee.

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, MARCH 6, 1942

1. Case Report: "Keratosis Blennorrhagica," by Dr. M. I. Jeff Davis.

The first case of keratosis blennorrhagica seen in Vanderbilt Hospital was presented from the dermatology clinic. The patient had recurrent attacks of urethritis over a ten-year period, and a polyarthritis at the time of admission. The skin lesions were quarter to half-dollar size, showing thick, laminated crusting, markedly raised above the skin level, which greatly resembled rupial syphilids. The palms and soles, as well as the axillae and scalp, were involved. The toxico-allergic nature of the disease probably accounted for the failure to find gram-negative diplococci in the urethral smears. The lesions responded to the prolonged administration of sulfathiazole.

This case was discussed by Drs. R. H. Kampmeier, Barney Brooks, and John B. Youmans.

2. "A Study of Mental Health in a Rural County," by Drs. William F. Roth and Frank H. Luton.

This study was started in 1935 under the supervision of the State Health Department with the cooperation of the Department of Psychiatry of Vanderbilt University School of Medicine. It aimed at the determination of the possibility of integrating mental hygiene with the activity of a county health department.

This paper describes the organization, methods of work of the study, and presents some statistical results of one of the major activities of the group which was to determine the incidence of mental health problems on an arbitrary census date (September 1, 1938).

This paper was discussed by Drs. W. S. Leathers, John B. Youmans, and Barney Brooks.

ABSTRACTS OF CURRENT LITERATURE

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

The Use of Uterine Packs Impregnated with Sulfanilamide. Harley Anderson, Herman L. Gardner, M. F. Gunderson, and J. M. Slack, Omaha, Nebraska. American Journal of Obstetrics and Gynecology, March, 1942, p. 410.

Uterine packing as tamponade in the puerperal uterus for the prevention of severe hemorrhage is an old procedure. It has long been recognized that the introduction of any foreign object into the uterine cavity, immediately after third stage of labor, increases the incidence of puerperal infection. For this reason various types of antiseptics have been employed in uterine packs with the hope that the action of the chemical, through its bactericidal action, would diminish the incidence of sepsis. Various types of uterine packing have been reviewed, either plain or impregnated with some chemical. Likewise various means of introducing the pack within the uterus have been described. The sole purpose of the uterine pack is to control bleeding in the atonic uterus after other means have been used as oxytocics. Delay in the use of the uterine tamponade very often results in a fatality. The introduction of any foreign object into the uterus increases the incidence of infection. The withdrawal of the uterine pack produces a curettagelike action at the time when the uterine cavity is teeming with bacteria. The purpose of the use of sulfanilamide impregnated gauze packs is prophylactic against infection because of the bacteriostatic action of the drug at the site of contact tissue. The technique of impregnating the gauze pack with sulfanilamide is described and discussed. The use of a small cotton ball, encased within the meshes of uterine pack, serves as a very satisfactory means of obtaining both aerobic and intrauterine cultures. In our judgment, grasping the anterior and posterior lips of the cervix with ring forceps, thereby bringing the cervix directly into view, and snugly introducing the gauze into the uterine cavity by means of a third ring forceps, is the most acceptable manner of packing the uterus. There is a general diminution in the number and kinds of bacteria in general, and of the hemolytic staphylococcus aureus in particular, when sulfanilamide is used to impregnate the intrauterine pack. Clinically, the plain pack, used as an intrauterine tamponade, increases morbidity above that of either the sulfanilamide or iodoform pack. This preliminary series is small, from a bacteriologic standpoint, and a larger number of cases is desirable before definite conclusions are drawn. However, from the fact that sulfanilamide gives a much more sanitary pack, tends to decrease the bacterial flora, inhibits growth of hemolytic streptococci, and is absorbed to a limited degree into the blood stream, it seems advisable to use sulfanilamide packs in preference to either plain or iodoform when indicated.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Pathology of Acute Glaucoma. Leo Hess. American Journal of Ophthalmology, February, 1942.

The anatomy of the involved structures and the function of the ciliary ganglion are discussed to show that acute glaucoma is a neurovascular condition dominated by the ciliary ganglion. Glaucoma has its analogy in certain pathologic changes of the liver, the kidney, and the spleen. In the clinical picture of acute glaucoma one must differentiate primary irritation or stimulation of parasympathetic nerve fibers and secondary spontaneous counteraction in the sympathetic fibers. The author considers the ciliary ganglion and all the neuro-elements within the globe as a unit, and the ciliary ganglion as the center for all nervous impulses arising within the eyeball. He believes that parasympathetic stimulation plays a primary role in glaucoma and suggests that there may be a neural control of the venous circulation of the eyeball which dominates its velocity and direction.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Roentgen Therapy of Hemangiomata. F. M. Hodges, L. O. Snead, and R. A. Berger. Radiology, Vol. 36: pp. 700-705, June, 1941.

The authors disclaim any intention of criticizing other methods of treating hemangioma. They do advocate the use of contact roentgen therapy and filtered roentgen rays in the strawberry type and the deep cavernous type of hemangioma or in combinations of these two types.

Several cases are reported in detail. The cavernous type received a treatment once a month and the number of treatments have varied from two to ten. The average dose was 120 r generated at 135-kilovolt units, a filtration of three millimeters aluminum at a rate of forty r per minute. The largest single dose ever used has been 200 r and the largest total dose over a ten-month period was 1,440 r. When contact therapy is used for the strawberry type, a single dose of 400 r in air is used, which is a suberythemia dose.

Good results have been obtained and no undesirable changes have occurred in the underlying structures. Hair follicles have not been disturbed. Salivary glands have remained unchanged and no interference with dentition has been observed.

Conclusions

1. We believe that contact roentgen therapy is the method of choice in the treatment of superficial strawberry hemangiomata.
2. In our experience the mixed strawberry and cavernous types respond best to filtered rays or to a combination of filtered and unfiltered rays.
3. We have been able with this technique to give a more uniform dose to the entire lesion and a smaller percentage of cases have required supplemental surgery.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II, M.D.
188 South Bellvue, Memphis

Shock: Its Prevention and Treatment. Alfred Blalock, M.D. Surgery Clinics of North America, 21: 1663, December, 1941.

In the pathogenesis of shock it is generally agreed that the principal factor involved is diminution of effective volume of circulating blood due either to a decrease in blood volume or an increase in the vascular capacity or both.

Prophylaxis against shock may be carried out by insuring adequate fluids, food, and vitamins as well as avoidance of exposure to cold. First aid in wounds should consist of exposing the wound by removing clothing and covering the wound with a sterile dressing to prevent further contamination from without. After the patient reaches a point where adequate facilities are available, scrupulous mechanical cleansing of the wound should be done and then debridement. Hemorrhage should be controlled by pressure dressings, or, if this is not successful, a tourniquet. Pain should be relieved by liberal doses of morphine unless a head injury is present. Fractures of long bones should be effectively and promptly immobilized with a Thomas splint or some improvised device. The application of heat is useful, but should not be carried to extremes. All wet clothing should be removed. The patient should be placed in shock position with the foot of the bed elevated. Vasoconstrictor drugs are of no value in severe traumatic shock and may be harmful since there is already marked vasoconstriction.

Intravenous fluids such as saline and glucose are more beneficial in the prevention of shock than in its treatment, since they eventually cause a greater loss in the blood protein by carrying it out through the capillary walls into the tissues. Whole blood is very beneficial in treatment of shock, but often there is great delay in obtaining it except in the case of blood banks in larger hospitals. Plasma and serum actually replace the same type of fluid lost in shock except in shock from severe hemorrhage, and hence comprise the most rational form of treatment. These can be given without typing or other delay. The dried form is most useful in that it can be easily transported and can be kept indefinitely. The dried form is diluted with water and given intravenously in amounts varying with the degree of shock. If the blood volume is greatly depleted, 1,000 cubic centimeters of plasma or serum may be given.

Oxygen inhalation with an oxygen tent or a Boothby mask is a great aid in treatment. Adrenal cortical extract may decrease capillary permeability. In injuries necessitating major operations the wise selection of the time of operation is of vital importance with regard to the presence of shock.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

The Treatment of Acute Epididymitis with Nupercaine in Oil. Robert Lich, Jr. Journal of Urology, February, 1942.

The following formula is used: nupercaine (base), .5 per cent; benzyl alcohol, 10 per cent; olive oil, 89.5 per cent.

The anesthetic mixture is prepared by first autoclaving the olive oil and then adding the nupercaine base dissolved in benzyl alcohol. Sterilization of the two latter is unnecessary since both are aseptic. Moisture must be guarded against since it causes a haziness of the solution and destroys the prolonged action of the drug.

The effect of the solution on body tissue was studied by injecting two cubic centimeters into the abdominal wall of a dog. Tissue from these injected areas was removed for study at two, six, eight, and fourteen-day intervals after the injection.

The two-day specimens demonstrated severe inflammatory reaction with necrosis; but no evidence of necrosis was found in any of the later specimens.

For the injection, the vas is isolated between the thumb and the forefinger above the inflamed area. The overlying skin is cleaned and anesthetized with novocaine solution. A No. 22 calibre needle attached to a syringe containing .5 to one cubic centimeter of the nupercaine oil anesthetic is inserted into the sheath of the vas. After making certain it is not in a vein, the solution is injected and the area then gently massaged.

Anesthesia occurs in from thirty to sixty seconds.

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MEDICINE IN THE ARMED FORCES OF OUR COUNTRY*

HIRAM A. LAWS, JR., M.D., Chattanooga

From the moment that Dr. Joseph Warren sent Paul Revere on his famous ride, medical men had a prominent role in the American Revolution.[1] During the English-French wars the members of the colonial profession had merely been students and assistants to the medical corps of the English armies. Now, that they were compelled to act independently and in direct opposition to former guides and masters, new self-reliance and zeal resulted. Their faithful service is attested by the statement that "more surgeons died in the American Revolution in proportion to their numbers than officers in the line."[2]

The Medical Department of the Army was established by an Act of the Congress on July 17, 1775, at the direction of General Washington. Provision was made for a director general and chief surgeon, four surgeons, one apothecary, twenty mates, one clerk, two storekeepers, one nurse to every ten sick, and occasional laborers.[3] In 1775 and again in 1776 the Congress authorized one surgeon and four mates for the general hospital service for each five thousand men in the Army.[4]

In "the days of '76" strong remedies were in vogue. Even in surgery, which was confined largely to amputations and trephining, a capital medicine in heroic doses was relied on "to start the disease from its foundations at once."[1, 5] Often a surgeon deftly used "a razor for an incision knife." In all cases suppuration was expected. Smallpox, diarrhea, dysentery, pneumonia, malaria, and "jail" fever or typhus, most of which was probably typhoid, were the diseases causing the greatest morbidity. Smallpox, the cause of the precipitate retreat from Quebec, was described as "ten times more terrible than the British, Canadians, and Indians together."[6] This scourge was soon controlled in large measure by inoculation.

In general, treatment was directed to symptoms and not to diseases; indeed, the cause or nature of no single disease was known. The one instrument of precision was the watch to time the pulse, and it was by no means always used. The hospitals were hotbeds of infection, and the mortality rate among the patients was exceedingly high. Supplies were meager at best, and often lacking altogether. In a sense, every winter of the struggle for American independence was a Valley Forge to the men of medicine.

With demobilization of the Army following the Battle of Yorktown, a mere skeleton staff was retained. Reorganization did not take place until the War of 1812. As armed conflict with the mother country once more became imminent, the Congress provided for "one surgeon and two mates for each regiment" and for the appointment of "such number of hospital surgeons as the service may require." In his military sketches of this period, Doctor Mann[3] deplored the impossibility of keeping good case histories and other records owing to "the ill-defined powers of surgeons and their pressing duties."

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*Presidential address delivered before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

The excessive morbidity and mortality incident to this campaign were caused by typhus and intermittent fever and dysentery that assumed a typhoid form in some instances. Bloodletting was the accepted treatment for dysentery. One bleeding of sixteen ounces, followed by a full cathartic of calomel and jalap, sufficed as a rule to bring about "mitigation of all the urgent symptoms." Acute rheumatism required the use of the lancet; the chronic form seldom demanded bleeding. "Inflammation within the breast," spotted fever accompanied by "mental derangement," jaundice, syphilis, paralysis, dropsy, and "depression of mind" also harassed the troops as they camped without shelter, making "the woods ring with coughing and groaning." For most of these conditions therapy consisted of bleeding, heat, a cathartic, and rest. Causes ascribed were "large potations of spirits, filth, and dirt." Dr. William Beaumont,[3] at a later time famous for his research in experimental physiology, wrote of "surgeons wading in blood, cutting off legs and arms and trepanning heads," adding that he himself had "cut and slashed for forty-eight hours without food or drink."

The need for a permanent head of the Medical Department became apparent during the War of 1812, but it was not until 1818 that the Congress provided for a definite medical organization, including a surgeon general, eight surgeons with the compensation of regimental surgeons, and forty-five assistant surgeons. Since that time the operation of this department has been continuous. Its budget in 1822 was all of $34,988.

The war with Mexico was fought on foreign soil with the Army a long way from its base of supplies and lacking adequate transportation. Among the 50,000 untrained and undisciplined volunteers the ratio between deaths from disease and those from wounds was approximately five to one. The chief diseases to be combatted were diarrhea and dysentery, yellow fever and malaria. A major problem arose from uncontrolled water supplies, and other difficulties were lack of sanitation and hospital tents and equipment. Ambulances were not to make their appearance in the Army until a dozen years later; but for the first time horse-drawn wheeled vehicles were used for the transportation of the sick and the wounded. It is recorded that "hospitals were hastily improvised in any convenient building, and the misery of the sick was increased by the squalor of Latin surroundings."[3]

Prior to the march to Mexico City a surgeon was assigned to the headquarters staff of each marching division. In his Medical Notes on Campaigns in Mexico, Porter[7] observed: "I have often regretted that etherization was so much resorted to in capital operations at Vera Cruz during a portion of 1847; nor can I avoid congratulating both the patients and myself that, before the summer had passed, the employment was wholly abandoned. Anesthetics poison the blood and depress the nervous system, and in consequence hemorrhage is much more apt to occur and union by adhesion is prevented."

Unpreparedness was again the keynote with the outbreak of the War Between the States. It was Jonathan Letterman,[7, 8] experienced as a surgeon in the Mexican campaign and now medical director of the Army of the Potomac, who planned the reorganization of the Medical Department in this war. He was the first officer to organize an effective and complete ambulance and evacuation service for any army. His plan of evacuation became the model for all other armies, and many of its features remain intact in the Medical Corps of the present day. It specified an ambulance corps for each army corps, with two-horse vehicles, provided with two litters each, in proportion of three for each regiment of five hundred. The corps, under the sole control of the medical director, was composed of a captain in command, a lieutenant for each division, one sergeant for each regiment, two privates and one driver to each ambulance, and one driver to each medicine wagon. In addition, Letterman[9] perfected the present system of supplying the Army with medicines and medical material, inaugurated the system of field hospitals, improved the forms for medicomilitary reports, and did much to combat camp diseases.

Diarrhea and dysentery were the most important causes of mortality from disease, and following tuberculosis, the most frequent cause of discharge for disability in the Union forces. They produced over 1,500,000 casualties among the white troops in the Northern armies. Too, the year 1865 stands out in the Army as the year of the war in which the worst epidemic of yellow fever occurred.

Toward the close of the War Between the States such great improvement had taken place that the care of the sick and wounded was now the best the world had seen up to this time. The wounded were being evacuated from field to base hospitals within a reasonable time, usually by means of hand litters, of which 50,000 were issued during the war; from the dressing stations they were removed by horse-drawn ambulances; hospitals were functioning with a considerable degree of efficiency; epidemics were under better control; and ether and chloroform were in use, as was also absorbent cotton for the first time. A total of 1,057,423 cases of wounds and disease were treated in field and general hospitals and a large number also in the post and regimental hospitals. The results more than warranted the expenditure of up to eight dollars per man. The entire amount expended by the Medical Department was $47,351,982.24.[7]

To meet the needs of field and hospital service, the grade of brigade surgeon was created, and the use of acting assistant surgeons in the city hospitals released younger men for active duty in the field. Also provision was made for young men of character who had had two years' education in medicine to serve as medical cadets. The great advances of this period were due to organization and administration largely. The day of aseptic surgery lay yet in the future; at best, twenty-eight per cent of amputations resulted in death, and the mortality in trephining was sixty-one per cent.[10]

Following the War Between the States, the Army was reduced to 25,000 men and scattered over the western country in small detachments to campaign against the Indians. It could hardly have been more unprepared when the Spanish-American War opened in 1898, although conditions were about as bad during the Philippine insurrections. In this war, notwithstanding the prevalence of yellow fever, typhoid fever caused eighty-five per cent of the total number of deaths. It is a matter of record that one high-ranking line officer refused to quarantine a certain water supply on the ground that the water tasted all right to him. He attributed the breaking of the pump soon afterward to some overzealous medical officer.[11]

The experiences of this period served, however, as a basis for the renaissance of the Medical Department, and in fact, of the whole Army. Immediately after the cessation of hostilities in Cuba, camp sanitation and preventive military medicine received more attention than ever before in the history of the world. As a result, in the World War, for the first time in the history of the United States, the sick and the wounded of the Army received from the beginning prompt and efficient treatment comparable with that which would have been available in well-equipped civilian hospitals.

With the turn of the century came many of the great advances of medicine. Had it not been for the discoveries that had robbed typhoid fever, lockjaw, dysentery, yellow fever, hookworm infestation, and the specific diseases of mankind of much of their terror, one would stand appalled at the mere contemplation of what might have happened during the World War. As it was, in this deadliest of wars, of every one hundred American soldiers two were killed or died of wounds or disease. Sixty-nine per cent of the deaths occurred overseas. The causes were: battle, forty-three per cent; disease, fifty per cent; and accident, seven per cent.[12] For the first time the United States engaged in a war in which the number of deaths in battle approached those due to disease. In the American Expeditionary Force proper the deaths in battle exceeded those from disease, not because the former were high in number, but because the latter were low. The mortality rates from disease per thousand men per year in the Mexican War, the War Between the States, the Spanish-American War, and the World War were, respectively, 110, sixty-five, twenty-six, and nineteen; thus the rate in the last war was only one-sixth that of the Mexican War. The astonishingly low death rate from disease and the fact that eighty-five per cent of the wounded received in hospitals were eventually returned to full duty constitute a remarkable achievement of medical science that made a powerful contribution to victory.[12]

In this war, for the first time in its history, the Medical Department was forehanded. It was courageous enough to expend over $7,000,000 before even a cent was appropriated, and the war came to an end with its supply section leading all others and having an adequate reserve available overseas. The total funds available to this department for the three years amounted to $468,496,238.63,[7] or nearly ten times as much as was expended for similar purposes in the War Between the States. The results are to be seen in a critical study of the casualty and mortality tables.

Despite these great improvements, this war was not without its scourge. Pneumonia in the wake of the measles epidemic of 1917-1918 and the great influenza epidemic of 1918, the worst in history, caused 83.6 per cent of the deaths in the Army from disease. The greatest contributors to the sick list and the chief causes of ineffectiveness were the venereal diseases. Remarkable results were, however, obtained in their control. The number of hospitalized cases per 10,000 men in the expeditionary force was reduced from seventy-five in November, 1917, to nine in September, 1918.[12]

Incongruous as it seems, out of this ghastly war came vital contributions to human welfare.[14, 15] It proved a stimulus to the advancement of medicine that fortunately should make the profession better able to meet the necessities of the present conflict. It demonstrated to the medical world the desirability of teamwork, specialization, and logical division of labor. Certainly it brought to public attention the physical and mental unfitness of far too large a number of the youth of the country for military service and emphasized the value of cooperation between the medical and military professions in relation to future mobilization, a necessity already upon us.

In surgery and its related specialties, debridement, the Carrel-Dakin technic, and the improved management of orthopedic cases, traumatic shock, chronic osteomyelitis, empyema, thoracic surgery, septic arthritis, and blood vessel surgery are only a few of the outstanding achievements. Advances in traumatic surgery and the standardization of acceptable forms of treatment were likewise important contributions.[16] In the realm of internal medicine, investigation of respiratory infections was stimulated, increased knowledge of cardiology and renal disease was acquired, and trench mouth was conquered. An antitoxic serum for gas gangrene was discovered. The treatment of neurosyphilis with malaria inoculation was instituted. New attainments in neuropsychiatry were notable, and the need for better care of permanent psychoses was emphasized. The science of nutrition and the study of food deficiency diseases were advanced.

Physical therapy and occupational therapy proved their worth. Roentgenology made its contribution in the perfection of a satisfactory method of localization of foreign bodies. Chemical warfare promoted valuable research and accomplishments that have aided industrial medicine. Preventive medicine gained new importance. The cause of trench fever was established by a committee of the Army Medical Corps, and the ravages of this disease, which, with lethargic encephalitis, was new in this war, were thereafter controlled.[17] The efficacy of typhoid vaccine and tetanus antitoxin was demonstrated on a large scale, and standardized methods of controlling and treating venereal diseases were developed. A broad extension of clinical activities in the field of public health also resulted.[18] Keeping pace with the destructive mechanism of war, these and numerous other beneficent achievements were protective and constructive forces that in the struggle for supremacy often counterbalanced or outweighed the accomplishments of destructive agents.

The objective of the Medical Department of the Navy is "to keep as many men at as many guns as many days as possible,"[19] certainly a timely mission at the moment. The Navy, organized by the Continental Congress in 1775, had sixty surgeons in 1842, when reorganization put into effect the present bureau system of control. The Bureau of Medicine and Surgery with its several divisions is the authority in the organization of the Medical Department and performs its duties under the direction of the Secretary of the Navy. In addition, the department includes naval hospitals, dispensaries, sick bays of ships, medical supply depots, technical schools, and the personnel necessary to man these establishments.

Members of the Medical, Dental, Hospital, and Nurse Corps make up the personnel. The authorized number of commissioned officers of the Naval Medical Corps was established by an Act of the Congress in 1916 as .65 per cent of the total authorized number of officers and enlisted men of the Navy and Marine Corps. By this Act the present strength of the Hospital Corps, delegated to care for the sick and the injured, is 3.5 per cent of the authorized strength of the Navy and Marine Corps. Afloat, the Medical Department performs its duties in the sick bays of ships, which, on the larger ships, are equipped as hospital wards with operating and isolation rooms and a dispensary. Also it serves on hospital ships, designed as floating hospitals. Ashore, it mans the naval hospitals, dispensaries, medical supply depots, and schools. Both the Fleet Marine Force, the Navy's principal expeditionary force composed of a highly mobile body of Marines, and the Landing Force, a permanent organization of officers and enlisted men of the Navy and Marine Corps, have their complement of medical personnel.

The Naval Reserve has four principal divisions, termed the Fleet Reserve, the Organized Reserve, the Volunteer Reserve, and the Merchant Marine Reserve. Many of the officers in the Medical, Dental, and Hospital Corps of the Naval Reserve are of outstanding prominence in their professions in civil life. In order to utilize their services to the greatest advantage, medical specialists' units and laboratory research units have been organized, to which the necessary Naval Reserve officers are assigned. These units provide organized groups qualified for assignment in time of war or of national emergency to hospital ships, station ships, or base hospitals as the staffs thereof or to augment the staffs of the regular Navy Medical Corps. Each medical specialist unit "is composed of eight medical officers and one dental officer of the Volunteer Reserve (special service class) who have specialized in surgery, ophthalmo-otolaryngology, urology, psychiatry, internal medicine, roentgenology, clinical pathology, orthopedic surgery, and prosthodontia."

Likewise, the Army Medical Corps is supplemented by the Medical Reserve Corps, the first reserve in any branch of the Army. Together with the Naval Reserve, this organization and the modern and efficient Medical Corps developed by the National Guard have conserved and advanced the lessons of military medicine since the World War. Valuable aids in this endeavor are the Army Medical School and the Medical Field Service School.[20] Thus, as it girds itself anew for service of almost inconceivable potentialities, military medicine is no longer afflicted with the handicap of the past; contrary to the accepted American practice of more than a century, this specialty need not again be recreated as war once more is visited upon this unmilitaristic nation.

New problems continually arise. As battle casualties of the World War differed from those of the previous wars in the overwhelming proportion of wounds caused by high explosives,[21] so today the civilian casualties may far exceed the military. As standardization of procedure and equipment, together with dissemination of knowledge based on war experience, constituted the richest contributions of the last great conflict to the advancement of medicine, so new and revolutionary discoveries may high light the present world conflagration. From the Philippines already comes word through news correspondents of a new treatment to avoid gas gangrene that is being used with success in the first open-air base hospital since the Sixties, the 2,900-bed unit established in January at Bataan.[22] Opportunity is now afforded for proof on a grand scale of the efficacy of the sulfonamides and the worth of the other contributions to medicine and surgery that have accrued in this latest interim between wars.

The recent article by Moorhead,[23] describing surgical experience at Pearl Harbor, is heartening. This author observed that the results were better than he had seen at any time during nineteen months in France, when he was serving in the last war with the French, Belgian, and American formations. He reported a postoperative mortality of 3.8 per cent, with most of the fatalities in the intra-abdominal group and among those depleted by shock and hemorrhage; there were no deaths from gas gangrene, and purulent discharge was practically absent. Here again the importance of early arrival of the seriously wounded at a military hospital was emphasized, and the greatest defect was inability to give this group better preoperative shock treatment.

The inauguration of Selective Service brought a new responsibility to the physicians of every community and another opportunity of service to the nation in the delicate task of examining, finding, evaluating, and recommending.[24] The local physician is often of particular value in detecting malingerers and eliminating the mentally unfit. His gratuitous service has gone far beyond any compensated service the government could afford.[25] A census of physicians for military preparedness has been taken and a national roster prepared.[26] The Procurement and Assignment Service[27] is now in operation, endeavoring to assure equitable utilization of the personnel of the profession in the present emergency. Through this agency every qualified physician has an opportunity to enroll in some service demanded by the national need. Its latest call is for 6,100 physicians, needed this year to provide adequate medical care for the air force alone, 2,500 to be commissioned by July 1 and 600 monthly thereafter for the period of 1942.

As the profession faces the greatest challenge in its history, word comes of the gratifying response of physicians everywhere, but to be commensurate with the demand their response must be even greater now, and it must continue to be increasingly great. Surely it is superfluous in the light of their past record and in the presence of this world crisis to urge them to do their best, for how could they do otherwise? Medicine in the armed forces of our country will carry on, and in the best tradition.

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STEWART-MOREL SYNDROME OR SYNDROME OF INTERNAL FRONTAL HYPEROSTOSIS*

J. P. GILBERT, M.D., Nashville

In 1898 Beadles[1] published an article in the *Edinburgh Medical Journal*, entitled "The Cranium of the Insane," from which the following is quoted: "Ever since the morbid lesions found in persons dying insane have been noted with any degree of accuracy, it has been observed, not only that there is greater want of symmetry in the outline of the cranium in the insane than in the sane taken as a class, but that the cranial bones also vary much more in their thickness. The frontal bone is most often the site of greatest thickening and the occipital region comes next. When it is distinctly limited in extent, the former is generally the portion of the cranium affected."

In 1928 Stewart[2] called attention to the association of frontal hyperostosis and marked obesity in the mentally ill, especially in women. Ferdinand Morel,[3] in 1930, introduced the term of hyperostosis frontalis interna, and gave the first report of a living example of this condition, referring to it as the "Syndrome of Hyperostosis Frontalis Interna with Adiposity and Mental Disease." In the same year Van Bogaert[4] reported a case, and in 1931 Schiff and Trelles[5] reported the third living case under the title of the Stewart-Morel syndrome.

Since 1935 many reports have occurred in the literature. Sherwood Moore[6] of St. Louis made an elaborate study of radiographic material. Of 6,650 roentgenograms of the skull, seventy-two examples were found of frontal hyperostosis, or 1.2 per cent. In 1936 Carr[7] of St. Louis reported seventeen cases. In July, 1941, Roth[8] reported eight cases. A study of these cases shows that they fall more clearly in the Morgagni syndrome of frontal hyperostosis, pituitary obesity, and virilism. Search of the literature has not been made for additional cases. Perkins and Biglan[9] in a review of the literature state that "the symptom complexes described by various authors consist of obesity, or tendency to obesity, muscular weakness and easy fatigue, headaches, cranial nerve palsies, frequently the seventh, epileptiform seizures, nervousness or tendency to worry and depression, mental slowness in the lesser grades of involvement, and dementia in those of full development."

Various authors have reported that it occurs from eighty-two to ninety-eight per cent in females, and in Carr's report of seventeen cases 100 per cent were females. In my series of five sixty per cent were women. The condition occurs most frequently in late adult life, the youngest reported being eighteen. Morel's original case was eighty-one and had been confined to an institution for thirty years. The hyperostoses are most frequently found in the frontal region, but may be diffuse, or in the parietal or occipital region. The deposits on the frontal bones are usually bilaterally symmetrical, lying on either side of the sulcus for the superior longitudinal sinus. They consist of cancellous bone covered by a thin layer of compact bone to which the dura is adherent.

Many hypotheses have been postulated as to the cause of the hyperostoses. Faulty fat and calcium metabolism, endocrine disturbances, and it is thought that reproduction plays a part, as most of the cases are in women who have borne children. Morel made serial sections of the wall of the third ventricle in four cases and found lesions consisting of excess of pigment and fat in the cells. He thought that the cause of the lesion in the wall of the third ventricle was the cause of the syndrome, but retracted this view in 1939. Bony changes do not occur elsewhere in the body.

A study of creatine-creatinine metabolism has been made in some cases, and in those creatinuria was found. Other studies of calcium and phosphorous metabolism have been made. Hypothyroidism has been found in a few cases. Amenorrhea and irregularities of menstruation are not uncommon.

Aminoacetic acid therapy was used by Carr to relieve the marked weakness in one of his cases. The results were so striking that he has continued to feed his patients large quantities of gelatin daily. This therapy has also cleared up the creatinuria in those cases where creatine-creatinine metabolism was studied. The hyperostosis is the most constant feature of these cases, but is thought by some to be the least important factor in the syndrome. Roth's series were in elderly people with hypertension and arteriosclerosis. The condition is considered progressive, and eventually becomes disabling and terminates in dementia.

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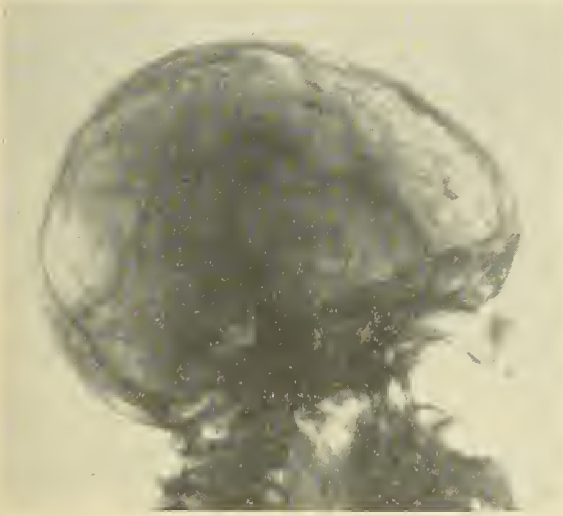
*Read before the Nashville Academy of Medicine and Davidson County Medical Society, Nashville, September 23, 1941.

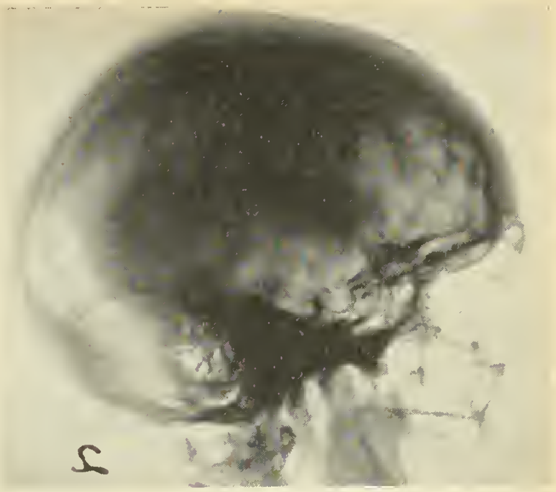
Case Reports

Case No. 1. B. G.; white female; pituitary obesity; aged twenty-six; height, five feet, two and one-half inches; weight, 233½ pounds; B. M. R., plus two per cent; Wassermann negative. Gained 100 pounds in five years, mostly in six months. Blood pressure: 1934, 150-98; 1941, 100-70. Complaints: headache, fainting spells, irregular menstruation, numerous other somatic complaints; neurological hyporeflexia.



Case No. 1

Case No. 2. H. M.; white female; aged thirty-three; three children; height, five feet, four inches; weight, 151 pounds. Gaining weight steadily, fifteen pounds in two months. Wassermann negative; B. M. R., minus fourteen per cent; calcium, 10.4; phosphorous, 6.6; menstruation regular. Complaints: headache, nausea, subjective weakness, and numbness left arm and leg; neurological negative.



Case No. 2

Case No. 3. M. B.; white female; aged thirty-six; height, five feet, two inches; weight, 172½ pounds. Pituitary type of obesity (pictures lost). Wassermann negative; urinalysis negative; neurological examination negative. One pregnancy with four months' miscarriage. Examined at the Davidson County Hospital for the Insane. Third commitment. Diagnosis: psychosis with metabolic disease—hyperostosis frontalis interna. Later discharged and committed suicide.

Case No. 4. C. B.; a medium-sized, moderately-obese white male; aged thirty-nine; occupation, retired naval officer. Wassermann negative; urinalysis negative; blood pressure, 130-80; neurological negative except absence of left patellar reflex. Complaint: frequent severe headaches and dizziness, nervousness, easy fatigability, poor concentration, insomnia, and constant burning in left arm.

This patient dates his trouble back to 1915 to an injury to his wrist from a foreign body. In 1922 the scar became painful. Neuromata were removed in 1924, again in 1935 and 1936. A diagnosis of psychoneurosis psyasthenia was made at Naval Hospital in 1924. His increasing disability and frequent hospitalization led to retirement in 1935 as unfit for active service in the Navy. Following this he was engaged in the feed business, from which he was forced to retire on account of nervousness, headaches, dizziness, and difficulty in concentration. He also gives history of "frequent night convulsions" from ages of five to nine. X-ray diagnosis: diffuse hyperostosis with nodular projections of the frontal bones, absence of suture lines, marked density of occipital bone, and increased intracranial pressure, a similar condition being reported in 1926. It is my understanding that this patient is now in recruiting service with the Navy.

Case No. 5. A white male; aged fifty; medium-sized; weight, approximately 150 pounds. Wassermann, blood, and spinal fluid negative. Urinalysis, trace of albumen. Blood pressure, 176-104. Complaint; headache for many years, nervousness, and insomnia. This man has drunk excessively for many years, rationalizing it on the basis of relief from chronic headaches. X-ray shows some thickening of the vault of the skull with enough irregularity of the inner surface to warrant a diagnosis of mild hyperostosis, according to Doctors Hamilton and Lanier.

SUMMARY

Five cases of internal frontal hyperostosis have been reported. Only one case had a definite psychosis, and is possibly the only one in the series that represents the true Stewart-Morel syndrome. One case, that of a male, with headache and chronic alcoholism as the presenting problems, shows a questionable degree of hyperostosis. The remaining three show varying degrees of neuropsychiatric disability.

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A CONSIDERATION OF THE SURGICAL TREATMENT OF TUMORS OF THE PANCREAS*

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For a proper understanding of the evolution of the surgery of tumors of the pancreas covering a short period of some fifty years, it is essential to review the discoveries in the physiology, anatomy, and pathology of the organ during the past century, for much of the surgery has been determined by these discoveries.

Claude Bernard[1] in his famous "Mémoire sur le pancreas," published in 1856, was the first sound contributor to the physiology of this organ in his experimental studies of the action of pancreatic juice in food digestion. Paul Langerhans,[2] while still a medical student in Berlin, published his remarkable histological studies of the pancreas as his inaugural dissertation in 1869. Using the transillumination method, as did Lister[3] in his studies of inflammation, a method only recently revived by Knisely[4] in his studies of the spleen, Langerhans described the several types of cells and tissues in the pancreas and, by his own original methods of dye injections, showed the acinar tissues to be separate from islet tissue. These islet cells were given scant notice until the French histologist Laguesse[5] recognized their anatomical importance and in 1896 called them "les islots de Langerhans," and Langerhans' cells they have since been called.

The persistence of these islands with atrophy of the acinar tissue, after ligation of the pancreatic ducts, had led many observers to consider islet tissue as directly related to an internal secretion controlling sugar metabolism. In 1889, a most important year in the story of the pancreas, Von Mering and Minkowski[6] for the first time demonstrated the exact role of the organ in carbohydrate metabolism and in diabetes mellitus by their experimental studies in pancreatectomized animals.

Several investigators during the next thirty years had been on the very verge of isolating the internal secretion of islet tissue and in more than one instance had produced an atrophy of the acinar tissue and made an extract of the remaining islands, injecting it into pancreatectomized animals with diabetes; but, because of impurities or insufficient amounts, they did not accomplish the crucial result. It remained for Banting and Best[7] to demonstrate to a waiting world, by positive and conclusive experimental physiology, this internal secretion, since named insulin, and to apply it therapeutically in the treatment of diabetes. Their announcement of this epoch-making discovery was published in 1922 in the *Journal of the Canadian Medical Association.*

A rapidly-developing knowledge of blood chemistry as the chief aid in the study of metabolic disease was of the greatest help in the immediate acceptance of insulin therapy. But it soon became evident that overdosage caused a sharp drop in blood sugar, giving rise to the protein manifestations of so-called insulin shock, and the avoidance and treatment of this syndrome became a major problem. It was during this period of four or five years after the discovery of insulin and its therapeutic complication that the idea occurred to Seale Harris[8] of Birmingham, Alabama, that overactive islet tissue, either as hyperplastic islands or as tumors of islet tissue, might account for the clinical picture of central nervous system disturbances associated with hypoglycemia. He discussed this possibility with Banting, who agreed with him in his hypothesis. Two or three years later a physician, suffering with the syndrome of severe insulin shock in the fasting state, came to Rochester, Minnesota, and after consultation with Wilder[9] and William J. Mayo, the patient was operated upon by Doctor Mayo. He found a tumor of the pancreas with metastases to the liver. The tissue removed at operation proved to be an islet cell tumor. Several weeks later autopsy corroborated the diagnosis, and biological assay of the liver metastases showed large amounts of insulin present in the tumor tissue.

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In 1929 Roscoe Graham[10] of Toronto removed a benign adenoma of islet tissue from a patient who was immediately relieved of her symptoms of hyperinsulinism, and has remained cured to date. This initiated a new and the latest phase of endocrine surgery, a type of surgery requiring the skill in diagnosis and operative technique previously demonstrated in the removal of tumors or hyperplasias of the thyroid, the pituitary, the adrenals, and the parathyroids.

The relation of islet tissue to hypoglycemic states had been noted in 1926, when Gray and Feemster[11] reported the finding of hyperplasia of islet tissue in an infant of a diabetic mother, dying in convulsions, shortly after birth. The fetus had been supplying the diabetic mother with insulin and with the sudden cessation of the physiologic demand at birth the islands caused low blood sugar and insulin shock in the infant.

Clinical tests of the external secreting function of the pancreas, although still in the experimental phase and not as yet completely satisfactory, are contributing materially to the diagnosis of the acute and chronic lesions of this organ. These newer methods have replaced the older tests of the stools for pancreatic digestion. These may be divided into those useful in the differential diagnosis of the acute lesions and those in the chronic inflammatory and obstructive lesions.

Tests for the acute lesions consist of lipase and amylase determinations in the blood serum. The tests for determining the chronic inflammatory lesions and the chronic obstructive lesions of the pancreas are based on the work of Swedish investigators. Starling[12] had in 1902 discovered secretin in the succus entericus. But it was not until 1937 that Agren and Hammersten[13] isolated the hormone secretion in crystalline form. Injected intravenously, this hormone causes a great increase in the flow of pancreatic juice. Lagerlof,[14] using the two-tube intubation technique, one tube in the stomach, the distal one in the duodenum, was able to aspirate pure pancreatic juice in large amounts by injecting secretin intravenously in normal controls. In chronic inflammatory or sclerosing lesions of the pancreas the response to secretin is markedly diminished. In obstructive lesions of the papilla of Vater or of the head of the pancreas the flow is absent, and differentiates these lesions from the jaundiced individuals with carcinoma of the common or hepatic ducts.

More recently the use of mecholyl or methyl acetyl choline has further elaborated the duodenal determinations of pancreatic ferments. Secretin, which is a hormone, increases the volume and alkalinity of pancreatic juice. Mecholyl, acting through the vagus, increases the concentration of the ferment without increasing the volume and alkalinity, and is a more accurate index of the activity of the acinar tissue rather than the obstruction of the flow of the pancreatic juice.

Contributions to our knowledge of the pathology of the pancreas have been made chiefly by Americans. Although autopsy findings in acute pancreatic lesions had been described by Schmackpfeffer[15] in 1817, Classen[16] in 1842, by Friedreich[17] in 1875, and by Balser[18] in 1882, it remained for Reginald Fitz,[19] distinguished physician and pathologist of Boston, to present the first clear-cut correlation between the acute hemorrhagic and acute suppurative lesions of the pancreas and the clinical picture, and he deserves full credit for calling the attention of physicians and surgeons to the entity of acute pancreatitis. It was in the important year of 1889 that Fitz delivered his famous Middleton-Goldsmith Lecture before the New York Pathological Society.

More recently a new chapter in the pathology of the pancreas has been added by pathologists and clinicians of this continent in their studies of islet cell tumors. These tumors were practically unknown until their clinical significance was recognized.

In 1926 Shields Warren[20] of Boston was able to collect only twenty instances, four of them his own cases, of islet adenoma from the entire literature. At that time no clinical significance was attached to these growths. With the removal of the carcinomatous islet tissue in 1927 by W. J. Mayo,[9] and an islet adenoma in 1929 by

Roscoe Graham,[10] interest in this remarkable endocrine tumor increased rapidly. Since then over 100 cases have been operated upon and most of these tumors have been found by surgeons at operation. It is rather a sad commentary on the care with which the pancreas is usually sectioned and examined on the autopsy table. These adenomas, of course, are small, averaging not more than a centimeter in diameter, but they should be found more easily by the pathologist than by the surgeon. The pathology of these tumors and the difficulty of grading them have been carefully studied in our laboratory and reported by Doctor Frantz.[21]

This review of the contributions to our knowledge of the pancreas is given because of its bearing upon our present-day ideas of therapy. During the past five to ten years surgeons have become more conservative in the treatment of the inflammatory lesions and more radical in the surgery of the tumors of the pancreas, and this attitude is the result of our increasing knowledge of the physiology and pathology of this organ and the additions to our diagnostic armamentarium of clinical tests and to our means of combatting jaundice and shock in operations for malignancy of this gland.

Tumors of the Pancreas

The problem of the surgery of the benign growths of this organ is relatively simple compared to that of the malignant tumors of the pancreas and the ampullary region, both from the physiological point of view and from the standpoint of operative procedure and prognosis. The rationale and the technique in the benign growths is now fairly well established, but the radical procedures for the malignancies is still both experimental and controversial, and the discussion of this subject requires an open mind and fair judgment.

Benign Growths

Before the discovery of insulin in 1922, which clarified the question of the internal secretion of the pancreas, only a small number of successful removals of benign tumors were reported. Gross and Guleke[22] in their comprehensive monograph on the diseases of the pancreas, in the section on the treatment of tumors of that organ, published in 1924, were able to find only six cases of benign tumors, surgically removed and published in the literature. With the report by Wilder[9] and his associates in 1927, of the carcinoma of islet tissue operated upon by W. J. Mayo, and the paper by Howland et al.[10] describing the first successful removal of an islet cell adenoma by Roscoe Graham in 1929, a new field of endocrine surgery was opened and since then in a period of some thirteen years well over 100 islet cell tumors have been removed. The pathology, the typical syndrome, the diagnosis and the indications for surgery and the technique of the operation in this group of lesions have now become clarified and standardized and the results, in qualified hands, are amazingly good.

Islet Cell Tumors

The majority of benign tumors of the pancreas are islet cell tumors and the majority of the islet cell tumors are benign adenomas. A small minority of these tumors are obviously malignant as shown by metastases in the liver or adjacent lymph nodes. A certain number of them are questionably malignant because of capsule invasion or the finding of islet cells in the blood vessels of the tumors. From the analysis of the 136 proven tumors, collected from the world literature and by personal communication from surgeons who have kindly sent me reports of their operated cases (see Tables I-IV), it is fortunately obvious that few of these endocrine tumors are definitely malignant. For this reason I shall limit my remarks to a discussion of certain features of islet cell adenomas. It is impossible in this lecture to go into the details of the pathology, symptomatology, and treatment of these tumors,[23] but certain points I would emphasize.

1. Disorders of the liver, the adrenals, the pituitary, the thyroid, the thalamus, in which hypoglycemia occurs, must be ruled out.

2. The syndrome associated with islet cell tumors must present the essential triad of: (a) attacks of central nervous system disorder—motor, vasomotor or psychic—coming on during the fasting state; (b) with

TABLE I

RESUME OF HYPOGLYCEMIA CASES TO DECEMBER 31, 1941

Reported in the Literature or by Personal Communication

Patients operated upon		160
Tumors found at operation	107	
No tumor found at operation	53	
Tumor found at autopsy, no operation		29
Total number of tumor cases		136
Benign adenomas	103	
Questionably malignant	22	
Carcinoma with metastases	8	
Harmartoma	1	
Cases not differentiated	2	

TABLE II

RESUME OF HYPOGLYCEMIA CASES TO NOVEMBER 1, 1941

Overlooked tumors at operation		10
Found at second operation	6	
Found at autopsy	4	
Multiple tumors		9
Found at operation	7	
Found at autopsy	2	

TABLE III

RESUME OF HYPOGLYCEMIA CASES TO DECEMBER 31, 1941

Mortality Figures

Postoperative deaths in 107 patients with tumor	16	15%
Patients died after leaving hospital	8	

Of these, six had carcinoma with metastases.

TABLE IV

SUMMARY OF ISLET TUMORS REMOVED AT PRESBYTERIAN HOSPITAL TO NOVEMBER 1, 1941

Total number of patients explored		22
Tumor found in		19
Tumor found at second operation		4
Benign adenomas removed		21
Questionably malignant		1
More than one tumor found in		2
Operative mortality in	2	9%
Pneumonia in	1	
Thyroid storm in	1	

Malignant carcinoma case died four months later in another hospital.

Hypoglycemia and the accompanying syndrome cured in sixteen of the sixteen survivors with tumor removal.

fasting blood sugar levels of fifty milligrams per cent or less; and (c) immediate recovery from these attacks on the administration of glucose by mouth or by vein.

Unless this triad is present, the diagnosis of a tumor requiring surgery should not be made. In a review of 107 cases of islet tumor removed by operation, only one patient showed a fasting blood sugar above fifty milligrams per cent and his reading was fifty-three. Because we have adhered to this rule, we have found islet tumors in nineteen of the twenty-two patients operated upon, whereas in another clinic reporting these tumors, and where the rigid criteria were not followed, a tumor was found in only sixteen out of forty-six cases.

3. In the majority of epileptics and narcoleptics with disturbed blood sugar the triad is not found, but in the doubtful cases electroencephalograms now give tracings characteristic of epilepsy and help to establish the differential diagnosis.

4. In patients with the definite triad in whom serious hepatic, pituitary, adrenal, and thyroid pathology has been ruled out, surgery is definitely indicated and should not be delayed for the following reasons: (a) The continued enormous daily intake of carbohydrate required to prevent their hyperinsulin shock results in rapid and marked obesity, and makes these patients bad operative risks and the surgical procedures exceedingly difficult. (b) The repeated attacks of insulin shock or prolonged hypoglycemic states favor subsequent mental instability and deterioration. (c) The tumors, if questionably malignant while still localized, may metastasize and become inoperable.

5. In exploring for these tumors a thorough search of the mobilized tail, body, and head of the pancreas by inspection and palpation must be made in order to find the tumor or tumors, for there may be more than one present. To palpate the head of the pancreas the duodenum must be mobilized to the left in order to expose the posterior surface of the head. We have found more than one tumor in three cases, and we have removed a tumor from the posterior aspect of the head in four patients who had been previously unsuccessfully explored. Five other such secondary operations have been reported, and in three autopsies tumors, overlooked at operation, have been found.

6. In order to obtain a free and adequate exposure of the entire organ, especially of the immobilized head of the pancreas with the duodenum, a wide transverse incision through recti and oblique muscles is essential. The usual left rectus incision is entirely inadequate.

7. If, after such a thorough search has been made, no tumor is found, the question of subtotal pancreatectomy has to be

decided. Merely removal of the tail or less than half of the pancreas will not cure the patient. David[24] of Chicago has very recently reviewed the indications and results of subtotal pancreatectomy for hypoglycemia. He reports the results as follows:

In twenty-two patients a partial or subtotal resection of the pancreas was done for hypoglycemic attacks. A tumor was found in eighteen, and in four cases at a second operation a tumor was found. There were five postoperative deaths; sixteen of the seventeen survivors were cured. It might be said that the tumor should have been discovered in these twenty-two cases if the organ had been properly immobilized and palpated.

There were thirty-five patients explored in whom no tumor was found in the excised pancreas tissue. These he divides into two groups:

Group I.—Partial resection, less than half the organ, was done in eighteen. Of these fifteen showed normal pancreas, three hyperplasia of islet tissue was noted, four patients died. Of the fourteen survivors three were symptom-free, three moderately improved, eight unimproved.

Group II.—In seventeen patients thirty-five to sixty grams of the pancreas were removed, at least two-thirds of the organ. Of these fourteen showed normal pancreas, two hyperplasia, one pancreatitis. One patient succumbed. Of the sixteen survivors eleven were symptom-free (and seven of these were followed for over two years), one was improved, four unimproved (two of these unimproved had fasting blood sugars of sixty-five to seventy milligrams per cent before operation).

Thus it is evident that the patients with excised tumors give far better results than the partial pancreatectomized cases. The patients in whom no tumor was present gave about sixty per cent cures if forty to sixty grams of pancreas tissue were removed.

In the study of these islet cell tumors we have been impressed with certain incongruities. The size of the tumor has no relation to the severity of symptoms. The largest tumor in our series gave no symptoms of hyperinsulinism and did not suggest the islet tumor syndrome. Brunschwig's case,[25] having the largest tumor on record (15 x 13 x 10 centimeters) did not have lower fasting blood sugars or more severe symptoms than many of the cases with tumors one to two centimeters in diameter. A patient may have a severe convulsion one day with a fasting blood sugar of forty-five, and only slight confusion or disorientation the next day with a reading of thirty or twenty-five.

The fasting blood sugar after a twelve- to fifteen-hour fast is a far more reliable test of islet cell function than is the glucose tolerance curve. We have come to look upon the latter as entirely unreliable as a differential test, and consider the glucose tolerance curve as a liver function test rather than a pancreatic function test.

The role of the other organs of internal secretion in the hypoglycemic state of islet cell tumors is not understood and offers room for much speculation. Without doubt the pituitary, the adrenal, and the thyroid glands play a more important part than any of the other endocrine organs in exerting some contrainsular or regulating mechanism by opposing secretions to the activity of islet tissue. The thyroid may be found to be overactive in some of these islet tumor cases, and with the removal of the tumor a fatal thyroid storm or crisis may occur. We have had one death—the only one in our benign adenomas—from this cause, and three other such crises have been reported.

Every suspected islet tumor case should have a basal determination, and if the rate is at all elevated, any reading over plus fifteen, the operation should be delayed until the patient has been given a course of Lugol's solution as in a case of toxic goitre.

We have made tissue cultures from twelve of the nineteen tumors which we have removed. The tumor cells grow readily as epithelial sheets, as well as the connective tissue cells of the stroma, as raylike sprouts. Early in our work the idea occurred to us of transplanting the tumor cells which had been grown in the plasma of the recipient diabetic patient into the areolar tissue of the axilla or groin of the diabetic, and we have tried such transplantations in four severe diabetics, with the hope and rationale that the physiological demand of the patients, on stopping or reducing their insulin, would stimulate the islet cells to grow and supply insulin to the patients, but in none of the patients so treated was there any evidence of growth or of decreased insulin requirement.

MALIGNANT TUMORS

The problems of physiology, pathology, diagnosis, treatment, and prognosis associated with cancers of the pancreas and the closely-related ampullary region involving the common duct, the duodenum, and papilla of Vater are many and far more complicated than in the benign growths. In the cancers of this area, because of pain, discomfort, and indigestion common to so many upper abdominal functional and organic disturbances and a jaundice frequently seen in both liver and biliary tract lesions, the diagnosis and therapy are usually so long delayed that when, as a last resort, these patients are turned over to the surgeon by the diagnostically-minded internist operation reveals a cancer, irremovable because of infiltration of adjacent structures or metastases to the lymph nodes and liver.

A discussion of the surgery of these malignant growths, both past and present, requires an open mind in evaluating the causes for the slow progress in the past and the advantages and disadvantages of the methods and technique which, during the last five or six years, have been developing in the radical surgery of these lesions.

William S. Halsted was the first to remove successfully a carcinoma of the papilla of Vater in 1898.[26] It is interesting that he was more radical in his operation than those who followed him in the transduodenal approach, for he did excise a segment of the duodenum with the tumor and resutured the duodenum. Into the line of the duodenoduodenostomy he implanted the cut ends of the common bile duct and pancreatic duct. This patient lived eight months and died of metastases.

The transduodenal approach for excision of cancers of the papilla or ampullary area has been used more often by more surgeons than any other in the attack on these tumors. It has the advantages of being less hazardous and maintains the continuity of bile and pancreatic flow into the duodenum. In the papillary, fungating type of carcinoma of the papilla, relatively nonmalignant type of cancer, this transduodenal excision is indicated and the long follow-up results of five years and more reported in a few cases have been on this type of growth. But not all tumors of the papilla of Vater, and none of the ampullary growths involving the lower end of the common duct or of the pancreas are of this papillary type, so that a limited local excision does not get wide of the growth or meet the criteria of cancer surgery in the majority of cases.

The idea of a wide removal of cancers of the ampullary area and pancreatic head was first elaborately described by Desjardins[27] in 1907, and independently by Sauvé in 1908.[28] They both advocated a removal of the duodenum with the head of the pancreas. Desjardins advised a one-stage procedure which included a gastroenterostomy, a cholecystenterostomy and an implantation of the pancreatic stump into the distal end of the severed duodenum. Sauvé advised a two-stage procedure, with a gastroenterostomy in the first stage, a duodenopancreatectomy with exteriorization of the pancreatic stump to the skin in the second stage. Neither of these surgeons carried out his operation in the human. The magnitude of the operation in a depleted patient, with the bleeding tendency associated with deep jaundice, deterred all but the most ruthless surgeons from attempting such radical procedures. Kausch[29] in 1912 published the first successful operation with duodenopancreatectomy for carcinoma of the ampulla. He performed the operation in two stages, doing a cholecystenterostomy and ligation of the common duct in the first stage, and later with relief of jaundice established a gastroenterostomy, closing the pylorus, and after removal of the duodenum and head of the pancreas, sutured the lower end of the duodenum over the pancreatic stump, thus preserving the flow of pancreatic juice into the intestine. This patient lived for nine months, but died of an ascending cholangitis.

It was this deep-seated conviction that the flow of pancreatic juice into the intestinal tract was essential to life that was one of the factors causing a prohibitive mortality in the radical operation for the next thirty years. Another factor, and one that explained the high incidence of hemorrhage, peritonitis, and duodenal and pancreatic fistula in these procedures, whether radical or by the transduodenal removal of ampullary cancers, was the universal use of absorbable catgut sutures and ligatures in these operations. The activated trypsinogen digested the catgut so rapidly that hemorrhage and leakage were almost inevitable. Surgeons until recently dreaded using silk or linen because of the contaminated field. As a result of the foregoing factors from 1898 to 1935 the transduodenal excision was, with few exceptions, the method used in some seventy-six cases collected from the literature and reported by Hunt[30] in 1935.

Following the fatal outcome, due to a duodenal fistula and peritonitis, in a transduodenal excision of an ampullary carcinoma which I performed in 1935, using catgut as suture and ligature material, we decided to undertake a more radical operation in two stages for the following reasons:

1. Dragstedt[31] in 1916 had demonstrated that animals could survive a complete duodenectomy and Mann and Kawamura[32] in 1922 had corroborated this observation. We knew that in some instances, as in Kausch's case, duodenopancreatectomy had been done, but without exclusion of the pancreatic juice from the intestinal tract.
2. Patients with ampullary cancer were able to survive for months, deprived of both biliary and pancreatic drainage into the intestinal tract, and showed an atrophy of disuse of the acinar tissue of the pancreas.
3. If bile could be restored by a short-circuiting procedure, the bleeding tendency would be corrected and digestion of fat improved—this was before the advent of vitamin K therapy.
4. In a later, second stage, operation radical removal of the duodenum and head of the pancreas, wide of the growth, could be undertaken.
5. We were convinced, from our experience in operating upon benign islet tumors of the pancreas, that fine silk technique would eliminate or markedly reduce the dangers of hemorrhage and peritonitis.

Later in that year, 1935, I assisted Dr. William Barclay Parsons[33] in our first radical operation, employing the two-stage procedure. In this patient, following a cholecystogastrostomy, a partial duodenectomy with excision of part of the head of the pancreas with duodenoduodenostomy, but with exclusion of the bile and pancreatic juice from the intestinal tract was accomplished. The patient later developed a duodenal stenosis requiring a gastrojejunostomy. In the second case, in the same year, I performed a cholecystogastrostomy and gastrojejunostomy in the first stage and a total duodenectomy with excision of the head of the pancreas. This patient lived twenty-eight months, but succumbed to liver metastases. Both these patients digested eighty to eighty-five per cent of a measured fat intake on more than one determination several months after the operation. But both of these patients developed a cholangitis, the first one dying of multiple liver abscesses nine months after operation. He did not, however, show a fatty liver at autopsy.

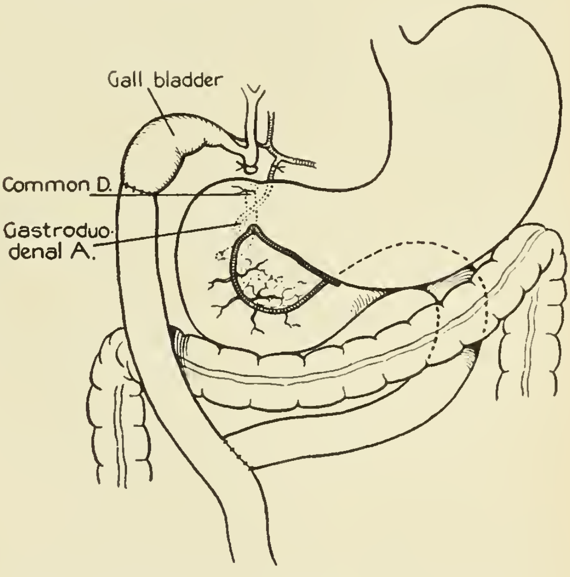

Fig. 1. First-stage cholecystojejunostomy with end-to-side jejunojejunostomy, with or without a gastroenterostomy.

Because of the tendency for infectious material to be forced into the gall bladder by the vigorous contractions of the stomach and a tendency to stenosis of the cholecystogastrostomy opening with biliary stasis and infection, we[34] modified the short-circuiting procedure in the first stage to an end-to-end cholecystojejunostomy with end-to-side jejunojejunostomy on the Roux principle (Fig. 1). In some thirty-four cases, the majority of them palliative procedures, we have found a very low incidence of cholangitis and we advise it rather than a cholecystogastrostomy.

Now that we can prevent bleeding in jaundiced patients with vitamin K and bile salts and repair liver damage by vitamin B and high protein-carbohydrate diet, prevent shock with continuous spinal anesthesia and whole blood, plasma, and serum transfusions, it is possible, in early and selected cases, to carry out these radical operations more safely in one stage. This avoids the hazard of two anesthesias and two major procedures with the handicap of what may be extensive adhesions in the second stage.

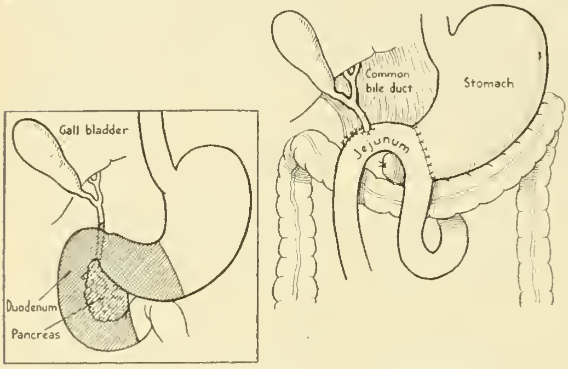

Fig. 2. One-stage radical duodenopancreatectomy with ante-colic gastrojejunostomy and implantation of the common duct into the jejunum.

We performed the first successful one-stage radical duodenopancreatectomy on March 6, 1940, removing the distal third of the stomach, the entire duodenum, and the head of the pancreas, with an antecolic gastrojejunostomy and an implantation of the dilated common duct into the jejunum (Fig. 2). This was done for a carcinoma of the head of the pancreas that on section proved to be an islet cell carcinoma, but without symptoms of hypoglycemia. This forty-seven-year-old woman had no postoperative complications, has regained twenty pounds, is living free from any signs of recurrence, jaundice or cholangitis or hypoglycemia some twenty months after operation.

Shortly after our first one-stage operation, Dr. Ridgeway Trimble[35] of Baltimore independently performed a similar one-stage operation for a carcinoma of the ampulla. This patient is well and free from evidence of recurrence nineteen months after the radical operation. Doctor Trimble's report of this case is complete and well illustrated in the November, 1941, number of *Surgery, Gynecology, and Obstetrics.*

From the analysis of the fifty-eight radical operations that have appeared in the literature or reported to me by personal communications, it is evident that the one-stage operation has been done in eighteen cases, and the majority of these have been done in the past two years, evidence that the one-stage operation is looked upon as the most promising measure.

But both the two-stage procedure and the one-stage procedure, as reported in the literature and in personal communications to me by surgeons who know of my interest in the subject (see Table VI), carry with them certain hazards and complications which must be eliminated and present problems which must be solved before these radical operations can be generally accepted. The two most serious complications are postoperative bile and pancreatic fistula. In the fifty-eight cases I have collected the incidence of fistula has been eleven bile, thirteen pancreatic, and two duodenal. Duodenal and pancreatic fistulae usually close spontaneously, but biliary fistulae seldom do. The bile fistula is due to the cutting through of the silk or linen ligature used in tying off the common duct. It is undoubtedly a better procedure when possible to implant the severed end of the common duct into the loop of jejunum used in the gastrojejunostomy in the one-stage operation or into the jejunal segment leading to the jejunojejunostomy in the two-stage procedure. Pancreatic fistula can be avoided if the open end of the dilated pancreatic duct is ligated carefully with silk and the V-shaped excision in the pancreas closed, or the whole stump of the cut pancreas may be tied with a silk ligature as advocated by Brunschwig.[36]

The question, "Is the maintenance of the flow of the external secretion of the pancreas into the gastrointestinal tract essential to the welfare and life of the individual?" has been a debated one especially in the last two years. Both experimental and clinical data, reported by various observers, are in disagreement on this important subject. Some investigators maintain that the external secretion of the pancreas contains the factor that is essential for the control of fat metabolism in the liver. Others do not agree with this statement. Almost all of the experimental data in this controversy have been gathered from studies in dogs. It is generally agreed that in these experimental animals total pancreatectomy followed by survival with insulin therapy has resulted in fatty degeneration of the liver and alterations in blood lipid content. Montgomery,[37] in his most recent work published in 1941, corroborates previous studies which showed that total ligation of the pancreatic ducts with complete isolation of the pancreas from any communication with the gastrointestinal tract will result in the same alterations in the blood and liver lipid content and a fatty degeneration of the liver. He also corroborates the claims that administration of raw pancreas and inactivated pancreatic juice, in large amounts, will prevent these changes. Dragstedt[38] and his associates maintain that pancreatic juice will not prevent this disturbance in fat metabolism in pancreatectomized dogs, but that raw pancreas will do so; and that it is not the choline, nor the lecithin in the raw pancreas that produces this effect, but that the active principle is a fat-free substance obtained in an active alcohol soluble extract of the pancreas. He believes this substance is a specific hormone and has named it lipocaic. Very recently in discussing this entire subject of lipocaic and exclusion of the external secretion of the pancreas from the gastrointestinal tract, Doctor Dragstedt[39] kindly gave me his most recent views on the subject.

"The effect of complete occlusion of the pancreatic ducts on the incidence of fatty infiltration of the liver in experimental animals has yielded conflicting results in the hands of different workers. In our experience the majority of such animals do not develop the extensive degree of fatty infiltration that is seen in the depancreatized dog in the same period of time. I believe that the discrepancy in the results of various investigators, and the variations in the appearance of fatty livers in individual duct-ligated dogs, depends very largely on the extent of degeneration in the pancreas that takes place as well as on the diet that is given to these animals. Ligation of the pancreatic ducts results in extensive destruction of the pancreas, whereas diversion of the pancreatic juice to the exterior by means of an appropriate fistula may leave the pancreas quite intact. The fact that animals with pancreatic fistula do not develop fatty livers when the pancreas remains normal indicates that fatty infiltration of the liver is not due to the absence of pancreatic juice from the intestinal tract. The presence of a moderate degree of fatty infiltration of the liver in a minority of the animals following ligation of the pancreatic ducts seems, therefore, to be due to the atrophy of the pancreas which takes place in these animals. There is evidence that this atrophy affects the islets as well as the parenchyma in some cases."

Furthermore, studies of the fat digestion in patients with complete duodenectomy and total exclusion of pancreatic juice from the gastrointestinal tract have shown[40] in three of our patients fat digestion of eighty to eighty-five per cent of a carefully-measured fat intake, and in the patient who came to autopsy nine months after the radical operation fatty degeneration of the liver was not found. Schnedorf and Orr[41] in a recent study of thirty-five cases of carcinoma of the pancreas and seventeen cases of ampullary carcinoma found only ten cases that showed fatty degeneration at autopsy. In only one of our five patients surviving for periods of five to twenty-eight months after the radical operation have we found a disturbed fat metabolism. This patient loses forty to fifty per cent of her measured fat intake, but is able to digest her fat by the taking of a preparation called holadin, a pancreatic substance particularly rich in lipase.

TABLE V

Summary of Cholecystenterostomies Performed at the Presbyterian Hospital—1937 to September 15, 1941

Cholecystduodenostomy	2
Choledochojejunostomy	1
Cholecystjejunostomy, not "T" type	10
Cholecystjejunostomy, "T" type	21
Total cases	34

In the patients followed we have records of only three cases with cholangitis, but the majority of the patients died outside of the hospital.

TABLE VI

Resume of Fifty-Eight Cases of Radical Pancreaticoduodenectomy Collected to December 31, 1941

	Two-Stage	*Postop. Deaths*	*One-Stage*	*Postop. Deaths*	*Fistulae*		
					D.	*B.*	*P.*
Carcinoma of ampulla	14	2	6	2	—	6	7
Carcinoma of pancreas	21	9	6	2	2	5	5
Carcinoma of duodenum	2	1	3	1	—	—	—
Carcinoma of common duct	3	0	1	1	—	—	1
Sarcoma of duodenum	0	0	1	0	—	—	—
No carcinoma	0	0	1	0	—	—	—
Totals	40	12	18	6	2	11	13

Total operated cases	58
Postoperative deaths	18
Operative mortality	31%

Thus it is evident that the question of disturbed fat metabolism in a patient whose pancreas is completely isolated from the gastrointestinal tract is not as yet completely answered, and only a large number of patients surviving the operation from three to five years will provide the necessary data for an accurate statement in this regard. It may be necessary to renew the efforts to re-establish the communication between the pancreas and the gastrointestinal tract in the radical removal of these ampullary and pancreatic cancers. The proposal of Kauer and Glenn[42] to implant the stump of the pancreas into the posterior wall of the stomach may be the answer to this problem. Hunt, in his last one-stage operation for removal of an ampullary cancer, sutured the lower end of the duodenum over the stump of the pancreas. In the meantime, the feeding of lecithin, pancreatic extract, and lipocaic to patients that show abnormal blood lipid levels and deficient fat digestion before and after the radical operation is clearly indicated to maintain fat metabolism and to prevent fatty changes in the liver.

The radical operation for these tumors of the ampullary region and pancreas, based on the principle of wide, *en bloc*, removal of the tumors, as required in modern cancer surgery, is evidently in an evolutionary stage. Many more cases, with five-year survivals, will be required before valid claims can be made for the operations as done at present. But it must be remembered that the patients untreated have an average of six months' survival from onset of symptoms until death. Many of them are tortured with the uncontrollable itching of obstructive jaundice. The considerable risk of thirty to thirty-five per cent is justified if they can be made comfortable even for a year or two. If only these patients could and would be referred to the surgeon before they are studied to death while the cancer is small and localized and before the patients are seriously ill with weeks of obstructive jaundice, a far lower operative mortality and a much longer survival would result in the care of these otherwise doomed patients.

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JAMES B. STANFORD, M.D., F.A.C.S.
President, Tennessee State Medical Association

James B. Stanford, M.D., F.A.C.S.

The President of the Tennessee State Medical Association for 1942 is Dr. James B. Stanford of Memphis. His election last year as president-elect met with the complete and entire approbation of the profession in his home city and of those who know him elsewhere. This recognition of the years of earnest devotion he has given to medicine is deserved without question, and is wholeheartedly conceded by everyone who knows him locally, in the state organization, and in his special connections nationally. Always honest and conscientious in all his personal and professional relations, the large clientele who consult him indicates only a just conception of his ability and personality.

Where and when a man was born is usually an immaterial point in so far as his afterlife is concerned, but it is customary in a biographical sketch to state such facts regardless of their pertinency. Doctor Stanford was born December 17, 1886, in Waldron, Arkansas. He was elected president of the Memphis and Shelby County Medical Society on his birthday in 1935. His academic work was done at the University of Arkansas, where he received a B.S. degree in 1906, and entered the medical school, which is now the University of Tennessee, in Memphis, that year, graduating in 1909. After a term as intern at the Memphis General Hospital and a short time in general practice, he went to the New York Eye and Ear Infirmary and did special work in ophthalmology and otolaryngology in 1911 and 1912, since which time he has practiced those specialties, confining himself to ophthalmology for the last twenty years. In 1917 he did special work at Harvard University. Doctor Stanford served in the World War as an officer in the Medical Corps, attached to Base Hospital 57, A. E. F., and was discharged with the rank of major.

In 1920 Doctor Stanford married Mlle. Valentine Mortreux of Bauvin, France, and is the father of two girls, Valentine and Jacqueline. He is a good golfer, an expert at his hobby of woodworking, and an active member of the Memphis Country Club. He is a member of the American Medical Association, of course, fellow of the American College of Surgeons, the American Academy of Ophthalmology and Otolaryngology, and holds the certificate of the American Board of Ophthalmology.

Doctor Stanford was for many years connected with the Department of Ophthalmology of the University of Tennessee and has served on the staffs of the various hospitals. He is known as a careful and conservative ophthalmologist, an operator of exceptional skill, and represents the very best traditions of the medical profession.

He has a keen mind which he keeps sharpened and polished by the kind of reading which might be considered extraneous to his daily routine work, but which makes him an inspiration to his friends, and which can but increase his appreciation of his scientific investigations.

A desire to know, a thirst for knowledge, has always been an outstanding mark of Doctor Stanford's mentality. These, with the possession of a proper curiosity, have been back of all great attainments in science, and even if one never expects to become one of those immortals who have accomplished imperishable feats, it is a worthy ambition to want to keep the horizon of one's mind as wide as possible. The mental twilight of cerebral sclerosis awaits all who live long enough. Let us learn while we may. Doctor Stanford's endeavor has been to live and learn and serve his fellow man to the best of his ability.

That he will measure up fully to the stature of the outstanding presidents of the State Association who have preceded him, and that he will set a standard which will be difficult for those who succeed him in office to equal, may be considered a foregone conclusion.

A. F. C.

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H. H. SHOULDERS, M.D., Editor and Secretary

MAY, 1942

EDITORIAL

THE DOCTORS AND THE WAR

The Surgeon General of the United States Army has issued an urgent appeal for volunteers to serve as medical officers with the armed forces.

In order to facilitate the issuance of commissions to doctors, found qualified, a Medical Officers' Recruiting Board has been created in each state and endowed with the necessary authority to enable the Board to commission qualified doctors immediately the examinations are completed.

Under the existing plan it is possible for a doctor to file an application for a commission with the Board, have the necessary examinations, and receive a commission within a period of twenty-four hours.

The Board for Tennessee has established headquarters at 702 Medical Arts Building, Nashville. Phone 5-8898. The medical member of the Board is Captain R. B. Chrisman, Jr.

Heretofore, there has been a great deal of complaint, more or less justifiable, that a long time elapsed between the date of filing an application for a commission and the receipt of the commission. Under the existing plan there will be no more delays.

It is the plan of the Board to travel through the state and establish temporary headquarters for brief periods in the cities of Memphis, Chattanooga, Knoxville, and Johnson City. The local profession in these cities will be notified in advance of the date the Board will visit each city and the location of temporary headquarters.

The suggestion has been made that it may be necessary to draft doctors. The Surgeon General of the Army holds to the view that an officer in the United States Army, and especially a medical officer, should be a volunteer. Furthermore, he expresses the faith that the doctors of the United States will volunteer in sufficient numbers to meet the needs of a rapidly-expanding army.

There are several reasons why a medical officer should be a volunteer. The position of an officer is one of leadership. In him is vested the power to make vital decisions. His attitude has a great deal to do with the morale of the troops which come under his care.

It is obvious that a medical officer who is serving unwillingly might do more harm than good.

The man who serves as a private does not occupy a position of leadership. He does not have vital decisions to make, nor could his individual attitude have a very important bearing on the morale of his associates. It is, therefore, apparent that the Surgeon General will be reluctant to issue a commission to a doctor who fails to make himself available for service as a medical officer and allows himself to be drafted as a private.

There is no denying the fact that war is what Sherman said it was—"hell."

Very few people volunteer to serve in an army for the thrill or pleasure they will get out of it. Most all who volunteer will do so out of a sense of patriotic duty.

It is becoming increasingly apparent to all that unless this war is won, there will be no such thing as freedom left.

One can philosophize or theorize at great length on the question of who should go and who should not go to war. One can theorize and philosophize at great length on the question of home needs versus army needs, but it all eventually boils down to this: In this war the army needs must come first. Civilian needs must come second.

One might philosophize a great deal on what are needs and what are luxuries, but actual needs must be determined by a very strict interpretation of the meaning of the word "need." Certainly every doctor is needed for civilian services to a greater or less extent. And the best are needed for service to soldiers.

One occasionally hears expressions to the effect that old men should fight the wars because they have had more to do with creating the conditions which make war than younger men. In theory one may find much to justify such a contention, but it is ruled out by the simple fact that an army composed of old men cannot win a war against an army composed of young men. It is obvious that young men must win the war. It is also true that the young man's future is at stake. The old man doesn't have much future left and such future as he has, at present, may be spent before the war is ended.

The war calls for sacrifice. There is no denying that. Few people have ever made a profit out of war, and certainly none will make a financial profit out of this war. On the other hand, the sacrifice to be made by all will be tremendous. The gain will be represented by the freedom that is won and the individual satisfaction that is earned through effort and sacrifice.

A COMMUNICATION FROM THE MEDICAL OFFICERS' RECRUITING BOARD

The following letter has been sent out by the Medical Officers' Recruiting Board. It is published here for the information of the profession:

Dear Doctor:

There has been created in Tennessee a Medical Officers' Recruiting Board, of which I am the medical member.

This Board was created and assigned to this duty for the purpose of expediting the commissioning of medical officers for the United States Army. The need for a large number of medical officers is *urgent.*

If you have heretofore made application for a commission and have not received the commission to date, you are requested to file a new application with this Board.

If you have made application for a commission and have been rejected on physical grounds, you are requested to file a new application, since the physical requirements have been modified very substantially in recent weeks.

If you have not filed an application for a commission, it is suggested that you file an application with this Board at once. The Board is in position to furnish you with the necessary forms and a person to assist you in their completion.

According to information filed with the Board by the Surgeon General, you are professionally qualified and are in the age group that is preferred for service with the Army.

If you have received a letter from Colonel Lull authorizing you to present yourself for a final-type physical examination, please bring this letter when you come to interview the Board.

This headquarters will be open continuously in Nashville. The dates on which the Board will be in Memphis, Chattanooga, Knoxville, and Johnson City have not yet been determined. Advance notice will be given those living in the vicinity of these cities as to the place and date the Board will meet in the respective cities for the purpose of reviewing and considering applications for commissions in the Medical Corps of the United States Army.

Yours very truly,
R. B. CHRISMAN, JR.,
Captain, Medical Corps,
Representative, Surgeon General's Office.

CONCERNING THE PRESCRIBING OF NARCOTICS OVER THE TELEPHONE

On another page of this issue of the JOURNAL under the heading of "News Notes and Comments" is a communication from Mr. G. W. Cunningham, District Supervisor, Bureau of Narcotics, addressed to Dr. Hiram A. Laws, Jr., President of the Tennessee State Medical Association, which is of interest to all doctors.

THE COMMITTEE ON POSTGRADUATE INSTRUCTION

As the postgraduate course in internal medicine draws to a close, the Board of Trustees appointed additional members to this committee for the purpose of making plans for the next postgraduate course, the subject of which will be surgery.

In our list of committees we are carrying the full committee, and will continue to do so until the course in internal medicine is completed and the course in surgery is begun.

THE MEMPHIS MEETING

The one hundred ninth annual meeting of the Tennessee State Medical Association was held at the Peabody Hotel, Memphis, April 14, 15, 16. The program was one of the best ever offered at a state meeting. A great number of those in attendance were very high in their praise of the scientific papers, addresses, and discussions.

The commercial exhibits were not only more numerous than usual, but showed greater care in their construction and in the presentation of material. The exhibitors enjoyed meeting doctors from all over the state and all exhibitors seemed highly pleased with the meeting.

For the first time in several years we were dependent upon local scientific exhibits, as it was impossible to secure exhibit material from the American Medical Association. Various committees of the Association displayed their work in an instructive manner. We hope that in future conventions the scientific committees will be able to equal in excellence the mark set this year.

The official registration of the convention was 409. A number of the doctors in attendance failed to register, and there was a liberal attendance, but no registration, of medical students from the University of Tennessee. All in all, the attendance was equal to, if not above, the mark we had a right to expect this year.

The next convention will be held in Knoxville, beginning the second Tuesday in April, 1943.

The Tennessee State Pediatric Society and the Tennessee Academy of Ophthalmology and Otolaryngology held their meetings on April 14.

Dr. C. Anderson Aldrich, guest speaker of the Tennessee State Pediatric Society, addressed the general session Tuesday, April 16. On Wednesday, Dr. Robert J. Reeves, Durham, North Carolina, was the guest of the Radiological Society and addressed the general session. Dr. J. B. McLester, Birmingham, ex-president of the American Medical Association; Col. Fred W. Rankin, president-elect of the American Medical Association; Dr. Edgar H. Greene of the Procurement and Assignment Service, Atlanta; and Dr. C. M. Peterson, secretary, Council on Industrial Health, American Medical Association, appeared on the program with messages of vital interest.

All papers delivered at the convention will be published in the JOURNAL sometime during the year, and we are sure this volume will form one of the most interesting in the history of the organization.

No account of the convention would be complete without special mention of our host society and the headquarters hotel. The local committee on arrangements, with Dr. E. G. Kelly as chairman, planned and executed its work so well that nothing was lacking. Individually, the members of the Shelby County Medical Society omitted nothing that would add to the pleasure of the visitors. The management of the hotel spared no expense in behalf of the comfort of those attending the convention.

DEATHS

DR. B. L. OUSLEY

Dr. B. L. Ousley, Christiana; University of Tennessee, School of Medicine, 1901; aged seventy-one; died April 2, 1942.

DR. M. H. WELLS

Dr. M. H. Wells, Watertown; University of Nashville, Medical Department, 1901; aged seventy-nine; died April 1, 1942.

DR. EDWIN A. SAYERS

Dr. Edwin A. Sayers, Nashville; University of Nashville, Medical Department, 1908; aged fifty-six; died April 24, 1942.

DR. R. O. CURREY

Dr. R. O. Currey, Chattanooga; University of Tennessee, College of Medicine, 1912; aged sixty-one; died April 26, 1942.

Dr. Lucius E. Kimsey

Dr. Lucius E. Kimsey, Ducktown; Vanderbilt University, School of Medicine, Nashville, 1898; aged seventy-five; died March 13, 1942.

Dr. A. H. Crouch

Dr. A. H. Crouch, Forbus; aged sixty-nine; died in March, 1942.

Dr. C. V. Stephenson

Dr. C. V. Stephenson, Centerville; Vanderbilt University, School of Medicine, Nashville, 1894; aged seventy-seven; died May 2, 1942.

Dr. R. W. Dulaney

Dr. R. W. Dulaney, Jonesboro; University of Louisville, School of Medicine, 1898; aged seventy; died April 5, 1942.

Dr. Basil T. Bennett

Dr. Basil T. Bennett, Trenton; Vanderbilt University, School of Medicine, Nashville, 1893; aged seventy years; died May 3, 1942.

NEWS NOTES AND COMMENTS

Dr. Maurice Seligman announces the opening of his office, Doctors Building, Nashville, for the practice of otolaryngology.

A communication from Mr. G. W. Cunningham, District Supervisor, Bureau of Narcotics:

Dr. Hiram A. Laws, Jr.
President, Tennessee State Medical Society
James Building, Chattanooga

Dear Dr. Laws:

For several years this office has endeavored to stop the practice of pharmacists throughout the State of Tennessee supplying narcotics to their customers on so-called telephone prescriptions of physicians. While a great deal of success has been had, this practice still continues to such an extent that something must be done about the matter.

The Harrison Narcotic Law provides that narcotic drugs may be sold by a registered retail druggist or pharmacist only in pursuance of a prescription written by a physician, dentist, or veterinary surgeon, who is likewise registered under the law, and it must be dated as of the day on which signed by the physician, or rather practitioner, and, of course, issued by such practitioner in good faith and in the course of his professional practice only.

The regulations promulgated by the Secretary of the Treasury under the authority delegated to him by the Harrison Narcotic Law provide that in an emergency a druggist may deliver narcotics through his employee or responsible agent to one of his customers, pursuant to a telephone order of a duly registered physician, provided the employee or agent is supplied with a properly prepared prescription before the delivery is made, such prescription to be turned over to the druggist or pharmacist and filed by him, as required by law, within a reasonable time after such delivery.

When a pharmacist supplies his customers with narcotics in any other manner, he is in violation of the Harrison Narcotic Law, and is amenable to criminal prosecution. If a physician telephones a druggist, and the two of them agree that the druggist shall supply narcotics in any manner other than that stated above, both the physician and the druggist are guilty of violating the law, inasmuch as the physician connived and aided the pharmacist in such violation.

In a number of instances ethical pharmacists have complained to this office that reputable physicians have called them and asked that narcotics be delivered to one of their patients, pursuant to such telephone orders, and that when they demurred to this procedure, the physicians suggested thereupon that they would send their business to some other pharmacist.

Frankly, I cannot conceive of the impulse which causes an ethical physician to assume such an attitude, if he knows that by his persuasion he is causing a druggist to violate the law, and likewise violates it himself.

The Bureau of Narcotics has no desire whatever to work a hardship on any physician, druggist, or any of the physician's patients; however, I have no alternative other

(Continued on page 197)

WOMAN'S AUXILIARY

MRS. J. D. LESTER

Never before in the history of the world have conditions called for so much careful planning of life and endeavor. Defense is the flash word from such sources as radios, newspapers, and magazines. Articles are written on "The Profession in Wartime," "The Auxiliary in Defense," etc.

This, with the emotional strain of war, may cause us to lose our balance and overlook our inherent responsibility—"our husband physician." Our responsibility is not like that of the lay neighbor, though she must not have her need underestimated. Ours is greater.

We are the defenders of the defense of our nation's health. We can do our duty only as we can see the difference in our obligation from that of other women. If our neighbor shirks her responsibility, it may cause an untidy house or selfish children; but if we shirk ours, it may mean a loss of life charged directly to our neglect or lack of interest. This can come about through many far-reaching avenues. First, our homes, our neglecting to do our part to maintain the kind of surroundings every doctor needs in order to serve mankind to his highest ability. Then with this point of view our first duty is to maintain a healthy, happy, progressive, home program for all there in order to lend that supporting background which is necessary to the successful effort of every physician.

Another challenge is "self-preparation" by studying and learning the "medical viewpoint," keeping a self-directed purpose, recognizing the things for which we are accountable as physicians' wives. Other worthy objectives can and will be done by the masses, but only the physicians' wives can do our specific duty.

The doctors have pledged their services to America and the auxiliary's pledge of service should be to the medical profession. Granting that the needs of the country precede everything else, the greatest service we can render humanity is "all-out aid to our doctors."

MRS. J. D. LESTER.

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Last call for reservations for the Twentieth Annual Convention of the Woman's Auxiliary to the American Medical Association, which will be held at Haddon Hall, Atlantic City, New Jersey, June 8-12.

Atlantic City extends a hearty welcome to you.

NEWS NOTES AND COMMENTS

(Continued from page 195)

than to enforce the Harrison Narcotic Law and its regulations with impartiality.

I have advised the pharmacists of the State of Tennessee that deliveries of narcotics to their customers pursuant to such telephone orders from physicians are in conflict with the law as set out in this letter, and if they continue this practice, they will be dealt with harshly, and where there is an agreement between the physician and the pharmacist, both will receive the same treatment.

I respectfully request that you read this communication to the Tennessee State Medical Society at its annual convention in Memphis this month, and I sincerely trust that in the future this warning will be heeded, and there will be found no instances necessitating the taking of any action looking toward the punishment of any physician for violating this law.

Very truly yours,
G. W. CUNNINGHAM,
District Supervisor, Bureau of Narcotics.

MEDICAL SOCIETIES

Davidson County:

April 21—"Nashville School Health Service: Its Aims and Objectives," by Dr. R. K. Galloway.

"Survey of Past Year's Work in Obstetrics," by Dr. L. J. Caldwell.

April 28—"An End Result Study of Fractures of the Hip Treated by Internal Fixation," by Dr. George Carpenter.

May 5—"Subdiaphragmatic Abscess," by Dr. T. F. Frist.

"Cause of Jaundice, Complicating Pneumonia," by Dr. Edward L. Turner.

Giles County:

The Giles County Medical Society met in regular session on April 23, and had as its guest speakers Dr. Ted Morford and Dr. Richard Crutcher of Nashville, Tennessee. Doctor Morford gave an essay on "Cancer of the Breast" and Doctor Crutcher gave a paper on the "Management of Wounds." Both of these papers were very interesting and instructive.

T. F. BOOTH, M.D., *Secretary.*

Greene County:

The Greene County Medical Society met Tuesday, May 5, and was privileged to have as their guest speakers Dr. J. Milton Stockman, Knoxville, who presented a paper on "Rectal Bleeding," and Dr. Joe T. Smith, Knoxville, who presented a paper entitled "Diarrhea in Infancy and Childhood: The Use of Chemotherapy in Its Treatment."

RAE B. GIBSON, M.D., *Secretary.*

Hamilton County:

March 19—Joint Meeting with Southeastern Branch of American Urological Association.

March 26—"Abstracts: History of Ophthalmology," by Dr. A. H. Benz.

April 2—"Chloroform: Its Place in Anesthesia," by Dr. H. M. Ausherman.

"Applied Physiology of the Nose" (a book review), by Dr. Douglas Chamberlain.

April 9—No meeting on account of meeting of Tennessee State Medical Association.

April 16—"Preventive Measures in Cardiac Diseases," by Dr. P. R. Hysinger.

"Some Fallacies in Diagnoses and Treatment of Heart Diseases," by Dr. James L. Bibb.

April 23—Paper by Dr. J. W. Bradley.

April 30—"Abstracts: Recollections of Early Days of Medical Practice in Chattanooga," by Dr. G. Victor Williams.

May 7—"Method of Handling of Brain Injuries," by Dr. Howard Karr.

"Present-Day Conceptions of Nasal Sinus Diseases," by Dr. David Isbell.

May 14—"Surgical Pathology of the Pelvic Organs" (colored moving pictures), by Dr. E. E. Newell.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met at Waynesboro, Tuesday night, April 28.

The following papers were read: "The Use of Sulfanilamide in the Peritoneal Cavity in Peritonitis," by Dr. Glenn D. Batten, Jackson.

"Congestive Heart Failure," by Dr. Alvin B. Rosenbloom, Jackson.

O. H. WILLIAMS, M.D., *Secretary.*

Knox County:

April 21—"History of Medicine Through the Roman Period," by Dr. Arch Carr.

"Coronary Disease," by Dr. W. T. DeSautelle. Discussed by Doctors Overhold and R. Smith.

April 28—"Medical History from Rome to the Renaissance," by Dr. E. Clark.

"Sex Hormones—Physiology, Diagnosis, and Therapy with Movie," by Dr. D. K. Kitchen (Parke, Davis & Company).

May 5—Banquet and program at Eastern State Hospital.

May 12—"Neurosurgery," by Dr. Cobb Pilcher, Nashville.

Madison County:

The Madison County Medical Society met in regular session on Tuesday evening, May 5, 1942, at 6:30 o'clock at the New Southern Hotel for dinner.

"Indications for Collapse Therapy in Pulmonary Tuberculosis," by Dr. Hollis Johnson of Nashville.

"Problems in Gynecology," by Dr. John C. Burch of Nashville.

Both papers were quite interesting and lantern slides were used for illustrations.

Report of plans for the West Tennessee medical and surgical meeting to be held in Jackson on May 14 were presented by Dr. John Jackson, assistant secretary of the body. Thirty-seven members and guests were present.

S. M. HERRON, M.D., *Secretary.*

Robertson County:

The Robertson County Medical Society met at the Robertson County Hospital on April 21 in regular session. Those present were Doctors Elder, Rude, Porter, Hawkins, Kempf, Dye, Freeman, and Banks of Springfield, and Drs. O. N. Bryan and Volney Woodring as guests from Nashville.

Dinner was served and the business session opened.

Doctor Elder, president, presided. Mr. Robert Ralston of the Federal Farm Administration was introduced. He made a brief talk, introducing Mr. Raymer of the same division, who explained the farm work in this division in view of securing medical aid. A committee was appointed by Doctor Elder to investigate. Those named on the committee were Dr. W. S. Rude, Ridgetop, and Dr. J. E. Wilkison, Springfield.

Doctor Rude, who attended the House of Delegates, gave a report of activities of the Association.

Doctor Freeman sponsored the program. He introduced as the guest speaker Dr. O. N. Bryan of Nashville, who spoke on "Typhus." There was a liberal discussion following his very interesting paper.

The society adjourned to meet May 19, 1942.

JOHN S. FREEMAN, M.D.,
Secretary-Treasurer.

Washington, Carter, and Unicoi Counties:

On April 2 the Washington, Carter, and Unicoi Counties Medical Society met at the John Sevier Hotel in Johnson City with sixty members and guests present. A Dutch dinner preceded the scientific meeting. Dr. E. L. Caudill introduced the first speaker of the evening, Dr. Edward T. Newell, Chattanooga, who gave a comprehensive paper on the "Management of Carcinoma of the Breast." This paper was illustrated with a movie in color, showing the surgical technique used by him.

The second speaker was Lieutenant Commander Fred R. Haselton, senior naval medical officer for Tennessee. He showed two splendid sound movies dealing with Navy life.

CHARLES P. WOFFORD, M.D.,
Secretary.

Washington, Carter, Unicoi Counties:

The May meeting of the Washington, Carter, and Unicoi Counties Medical Society was held at the John Sevier Hotel, Johnson

City, on May 7. A Dutch dinner preceded the meeting. Dr. J. R. Moody was appointed a member of the Board of Censors to fill the vacancy created by the departure of Dr. H. L. Monroe, who left for the Army. Dr. Aaron Cole was approved for membership in the society.

A revised fee schedule was presented to the society by a special committee headed by Dr. H. D. Miller. A motion was unanimously approved to the effect that a local committee be appointed by the president to act in an advisory capacity with the local representatives of the Procurement and Assignment Committee of the State.

The speaker of the evening was Dr. H. H. Bradshaw, professor of Surgery, Bowman Gray School of Medicine, Winston-Salem, North Carolina, who spoke on "Cancer of the Stomach," illustrating in detail the technique of partial resection of the stomach by the intrathoracic route. Forty-five members and guests were present.

CHARLES P. WOFFORD, M.D.,
Secretary.

Wilson County:

The following papers have been read before the Wilson County Medical Society:

March 5—"The Place of Electrocardiography in General Practice," by Dr. Phil Turner.

Case report by Dr. John Hill Tilley.

April 2—"Differential Diagnosis of Acute Communicable Disease," by Dr. R. C. Kash.

May 7—"Mistakes," by Dr. Sam McFarland.

Case report by Dr. J. R. Doak.

On June 4 Dr. F. B. Dunklin will discuss "Diseases of the Spleen."

OTHER MEDICAL SOCIETIES

The West Tennessee Medical and Surgical Association met in Jackson on May 14. The session was held at the New Southern Hotel. The following papers were read:

"Cholecystectomy" (case reports), by Dr. J. B. Cochrane, Dyersburg. Discussion by Drs. W. T. Black, Jr., Memphis, and Jere R. Crook, Jackson.

"Normal Labor," by Dr. Roderick Webb, Bemis. Discussion by Drs. W. D. Mims, Memphis, and B. F. McAnulty, Bolivar.

"Hemorrhages from the Gastrointestinal Tract in Infants and Children," by Dr. Clyde V. Croswell, Memphis. Discussion by Dr. W. D. Mims, Memphis, and John E. Powers, Jackson.

"President's Address," by Dr. V. E. Massey, Huntingdon.

"Military Medicine in Civil Life," by Colonel G. P. Grabfield, Medical Corps of Second Army Headquarters, Memphis.

"The Management of Pregnancy Complicating Tuberculosis," by Dr. Hollis E. Johnson, Nashville. Discussion by Drs. George Boon, Paris, and C. M. Oberschmidt, Memphis.

"Sterility," by Dr. Wilson M. Searight, Memphis. Discussion by Drs. John C. Burch, Nashville, and James C. McClaran, Jackson.

"Changes in the Clinical Course of Suppurative Middle-Ear Infections by Sulfanilamide Therapy," by Dr. Sam H. Sanders, Memphis. Discussion by Drs. Percy Conyers, Dyersburg, and Stanford Herron, Jackson.

The American Congress of Physical Therapy will hold its twenty-first annual scientific and clinical session September 9, 10, 11, and 12, 1942, inclusive, at the Hotel William Penn, Pittsburgh, Pennsylvania.

For information concerning the seminar and program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, APRIL 17, 1942

1. Case Report: "Pathogenesis of Erythroblastosis Fetalis and Related Intragroup Transfusion Reactions," by Dr. Jimmy Lewis Pinkston in collaboration with Dr. Philip Levine of the Newark, Beth Israel Hospital.

Clinical and experimental data upon seven healthy families were reviewed as to erythroblastosis fetalis, repeated pregnancy accidents, and intragroup transfusion reactions as caused by the agglutinogen Rh. In each case the mother was Rh-negative and the father Rh-positive in accordance with the theory of Levine and coworkers.

These cases were discussed by Drs. Katharine Dodd and Ann S. Minot.

2. "Observations on the Physiological Reactions of the Ductus Arteriosus," by Dr. Sam Clark and Dr. Allen Kennedy.

The ductus arteriosus was visualized in a large series of fetal guinea pigs near term, which were left attached to the placenta and retained in a warm saline bath in which the mother was also partially submerged. Observations showed that the ductus closed within a few minutes following the onset of normal respiration, and could be closed with the chest open by inflating the lungs with air with tracheal cannula. Since this appeared to be a reflex, a search was made for possible neural pathways. However, the ductus could be closed by lung inflation following section of the vagus nerves, the phrenic nerves, the removal of the left stellate ganglion, bilateral removal of the carotid arteries, destruction of the spinal cord and medulla and ligating all structures above the arch of the aorta. Histologic section of the ductus, as well as observations of the injected vascular system, indicated that closure was depending on muscular contraction of the ductus wall. A ductus after closure, if placental circulation remained intact, would open again following cessation of inflation. It could be closed again repeatedly with inflation. While inflation of the lungs with air resulted in closure of the ductus, inflation with nitrogen was not followed by closure. Injection of a small amount of oxygen directly into the umbilical vein in fetuses which had not breathed or been inflated resulted in closure of the ductus. It is suggested that patent ductus arteriosus can result from the failure of physiological mechanism rather than developmental abnormality.

This paper was discussed by Drs. John Youmans, Morton Mason, Allen Kennedy, W. deGutierrez Mahoney, and Charles E. King.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Ether Anesthesia in the Presence of Pulmonary Tuberculosis. H. K. Beecher and Ralph Adams. The Journal of the American Medical Association, April 4, 1942.

There has always been a prejudice against using ether in patients whose respiratory systems were impaired.

The authors claim that this prejudice has no justification. While many papers have been found which deal with the use of ether in the presence of pulmonary tuberculosis, no report of careful case studies has been found. It has been found by investigators that ether exerts no injurious effect on tubercular guinea pigs.

At the Massachusetts General Hospital 147 patients with pulmonary tuberculosis underwent 260 thoracoplasties under ether anesthesia, using the closed system with carbon dioxide absorption, which is superior to the open method. All patients were followed for a year or two, and the results were as satisfactory as those following other forms of anesthesia in like cases. The complications noted were: anoxemia and shock, three cases; pneumonia, four cases; atelectasis, four cases; ipsilateral spread, five cases; and contralateral spread, three cases.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Cancer from a Gynecologic Viewpoint. John H. Randall. Journal of the Iowa State Medical Society, Vol. XXXII, No. 4, April, 1942, pp. 166-169.

The author reviews the malignancies admitted to the State University of Iowa Hospitals from July 1, 1926, to July 1, 1936, in the Department of Obstetrics and Gynecology. Since twenty to thirty per cent of all malignancies in women occur in the genital tract, this review of a total of 744 cases presents valuable information. The fact is stressed that female genital cancers are more easily diagnosed and treated with better results than any other malignancies in the body.

Uterine carcinoma accounted for eighty per cent of all female genital malignancies. Ninety-three per cent of all uterine cancers are of the epidermoid type and usually begin in the region of the external os. Seven per cent are adenocarcinomas, often beginning in the cervical canal. It is emphasized that cervical cancer produces two symptoms of importance—vaginal bleeding (first symptom in seventy-five per cent of cases) and leukorrheal discharge. Forty per cent of all postmenopausal bleeding will be due to cervical cancer. Bleeding is often a very late symptom, the disease having a real start. Therefore the author believes that to solve the cervical cancer problem it will be necessary to diagnose the disease before symptoms have developed. *It should be the practice of every physician when performing a routine physical examination to include the genital tract as well as the rest of the body.* Measures for early recognition are contact test, biopsy, with the aid of staining with solution of iodine. The treatment of cervical cancer is irradiation therapy. Most clinics rely upon radium for the destruction of the local lesion and depend on X-ray therapy for parametrial and lymphatic spread. It seems more advantageous to begin treatment with X-ray therapy, especially in the far-advanced cases, and later destroy the local lesion with radium. The results in treatment transvaginally with X-ray have been encouraging in recent years, but this will not replace the use of radium and X-ray. Surgical approach through the use of simple total hysterectomy is inadequate and not advocated. There have been 478 cases of cervical cancer admitted to the university hospitals in the ten-year period from July 1, 1926, to July 1, 1936. A five-year survival rate of 24.68 per cent is reported which may seem quite low, but the encouraging feature is that the survival rate for the last two and one-half years of this period was 35.63 per cent for 174 cases. *It is revealing that there were eleven cases of carcinoma of the cervical stump in patients who had previously undergone subtotal hysterectomy.* All of these patients developed symptoms at least two or more years after they had had their operation. The five-year survival rate of this particular group was 54.54 per cent. The stage of the disease at the time the patient is presented for treatment is more important than the histologic type.

Carcinoma of the body accounts for sixteen per cent of the gynecologic cancers. Less than five per cent occur before forty years of age, the common age being between the ages of fifty and sixty. Irregular bleeding is the only symptom of importance, and when it occurs the patient should be subjected to curettage if a pelvic examination reveals no malignant lesion in the lower genital tract. The treatment, now well standardized, is irradiation followed four to six weeks later by total abdominal hysterectomy. The technic is important, the cervical canal being packed with gauze and closed with sutures, the distal ends of the fallopian tubes being ligated as soon as the abdomen is opened and the entire uterus and adnexa on both sides being removed with a minimum of trauma. In the ten-year period, 1926-1936, the University Hospital treated 122 corporal carcinomas with a survival rate of 41.8 per cent.

Ovarian carcinomas account for twelve per cent of female genital carcinoma and produce only two common symptoms, enlargement of the abdomen and abdominal distress. Ascites, bilateral ovarian tumors, and nodules in the cul-de-sac are suggestive of ovarian cancer. In general, any ovarian tumor larger than an orange, even if symptomless, should be removed. If smaller than an orange, it is likely to be a retention tumor and should be observed from time to time unless it produces symptoms. Ovarian tumors occurring after the menopause have a high rate of malignancy. The treatment of this condition is a combination of surgery and irradiation. During the ten-year period, 1926-1936, the University of Iowa Hospitals treated eighty-five ovarian cancers with a five-year survival rate of 35.29 per cent. The prognosis is best in ovarian cancers which arise in previously benign lesions and poorest in primary or metastatic carcinomas.

Vulvar carcinoma usually begins in the skin of the clitoris or that covering the large labia, and accounts for about four per cent of the genital cancers in women. Vulvar carcinoma responds poorly to irradiation and surgery is advocated, removing the entire vulva, followed in two weeks by a bilateral lymph node dissection, according to Taussig. Twenty-five cases were treated in this series from 1926-1936 with a five-year survival rate of twenty-four per cent. Since 1930 the more radical procedure has been employed and the five-year survival rate has been 38.46 per cent.

Vaginal cancer represents two per cent of the genital malignancies, usually occurring in the upper third of the posterior wall of the vagina, and producing symptoms similar to those of cervical cancers. Treatment combines radium and X-ray therapy, yielding the university from 1926-1936 a five-year survival rate of 5.5 per cent for eighteen cases.

Sarcoma of the uterus represents one to two per cent of genital cancers. They arise in the muscle wall of the uterus, in the endometrium, and fibroid nodules. The treatment is complete removal along with the adnexa. The prognosis is poor except in those which begin in fibroid nodules. Most of the cases as reported by the article are of this latter type, showing a five-year survival rate of seven out of nine for 77.7 per cent.

Chorioepithelioma makes up less than one per cent of genital malignancies in women, usually following hydatid moles, the remainder being derived from uterine abortions and full-term pregnancies. The treatment consists of complete hysterectomy and the removal of the entire adnexa on both sides. The five-year survival rate for six cases during the ten-year period under consideration has been fifty per cent.

Carcinoma of the tube is one of the rarest genital malignancies, usually not diagnosed prior to operation, and when discovered should be treated the same as an ovarian carcinoma.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Ocular Manifestations in Myasthenia. R. D. Mattis. American Journal of Ophthalmology, April, 1942.

This report is based on the study of twenty-six cases chosen at random from the myasthenia gravis clinic of the Massachusetts General Hospital. It discusses general symptomatology and the tabulated results of a study of the types of ocular manifestation and other frequency in this series. The signs and symptoms discussed individually are: diplopia, effect upon ocular musculature, ptosis, pupillary reaction, and accommodative power. Ocular manifestations in myasthenia gravis are due not to a contracted state of the musculature involved, but to some neuromotor dysfunction that is considerably benefited by the administration of prostigmine. There may be a selective hypoactivity of the nicotinelike effect of acetylcholine, with an apparently normal muscarinelike action and cholinesterase mechanism. The extraocular muscles in this disease commonly exhibit the phenomena of "transient tropia" and "drifting phoria," which are relieved by prostigmine in some cases. The pupillary reactions are usually normal and appear to be unchanged by prostigmine therapy. No remarkable refractive errors are associated with myasthenia gravis, and no change in visual acuity has been found with or without therapy. The ocular manifestations of myasthenia gravis are more common than is generally thought, and the ophthalmologist is afforded an excellent diagnostic aid in the form of intramuscular injections of prostigmine methylsulphate solution.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Twelve-Year Review of X-ray Therapy of Gas Gangrene. James F. Kelly and D. Arnold Dowell. Radiology, Vol. 37, pp. 421-439, October, 1941.

The present-day status of the use of X-ray in treating gas gangrene is discussed, and it is pointed out that the mortality rate where X-ray is used (11.5 per cent) compares very favorably with all other methods.

The article is quite extensive and the authors' summary and conclusion, which are quoted below, cover most of the important points which are covered. The technique of treatment is not discussed in detail, but it should be pointed out that the treatment should be small; that is, fifty to 100 r generated at sufficient kilovoltage to penetrate the involved part and should be given at frequent intervals, often twice a day. The opinion is also expressed that in this infection sulfanilamide should not be used, since it apparently has some antagonistic effect on the action of X-ray, and that better results are obtained when X-rays alone are used than when both sulfanilamide and X-rays are used.

Summary

Many facts of interest and some of importance have developed directly and indirectly from a twelve-year study of the X-ray treatment of gas gangrene:

DIRECTLY

1. The X-ray provides a certain and definite means of prevention and treatment of gas gangrene.

2. The X-ray has made the use of serum unnecessary as a means of preventing and treating gas gangrene. Irradiation is effective after serum fails.

3. The cases analyzed suggest that the use of serum may even be harmful to the diabetic who develops a gas infection. This finding raises the question whether or not aged patients can withstand any type of serum without injury.

4. The X-ray has been used successfully for the prevention of other varieties of infection after recent injuries as well as gas gangrene.

5. The X-ray has removed gas gangrene from the class of acute diseases having a high mortality and morbidity, in which experimental therapeutic measures are justifiable.

6. Finally, the X-ray has completely eliminated the necessity of extensive surgery as a means of treating gas gangrene during its acute invasive stage. Any surgery indicated by the initial injury or disease should be performed, but no surgery directed toward the treatment of the gas gangrene is required, with the occasional exception of a few incisions to relieve local tension caused by deep gas pockets or collected serum. Amputation and extensive debridement are now obsolete procedures in the toxic stage of the disease, and have been practically eliminated after the disease has subsided because they are seldom necessary. They should never be necessary if treatment is started early and is properly given.

INDIRECTLY

1. This study has been a factor in the promotion of the general use of X-ray therapy for inflamma-

tory disease at the bedside, with an apparatus of adequate kilovoltage.

2. Due to the similarity of organisms involved in gas gangrene and acute spreading peritonitis, the X-ray has been used in the latter disease with excellent results, and further investigation of this procedure is indicated.

3. It has been proved quite conclusively that the X-ray and sulfanilamide should not be used at the same time in acute inflammatory processes. Prior to the use of the sulfonamides the X-ray was able to halt the progress of the gangrene-forming infections in practically all instances, but when the two agents are combined the destruction of tissue continues; in fact, it seems to be accelerated.

4. The curative action of the X-ray in gas gangrene establishes beyond any doubt the fact that the X-ray is of value in treating infections, since the gas infections are uniformly resistant to other treatments, but respond consistently to X-ray therapy.

5. The antitoxic effect of the X-ray in acute infections is amply demonstrated in treating gas gangrene, acute spreading peritonitis, surgical mumps, erysipelas, and other toxic acute infections. This general reaction, as well as the favorable local effect, was evident to many clinicians years before gas gangrene was treated with X-rays, but as other measures at times had the same effect it was difficult to establish the value of X-rays in this regard. As the late Willis Manges pointed out to this writer, their action in gas gangrene is unparalleled by any other measure, and this has placed the value of the X-ray in treating certain acute toxic infections well above any reasonable criticism.

This antitoxic effect is apparently nonspecific, resembling the nonspecific effect in preventing peritonitis after colon and rectal surgery, an action first reported by the Ford Hospital group.

Conclusions

The X-ray should be used early in gas bacillus infection, but will cure many cases in the late stages with little or no danger to the patient, and at the same time provide for the maximum of tissue recovery. It will also prevent the disease. If a means of treatment is discovered which will do more, it should be used. In the meantime, X-ray therapy is indicated in man; experimental measures should be confined to the usual well-recognized experimental channels.

Sulfanilamide and its early derivatives are definitely incompatible with X-ray therapy. We know nothing about the later sulfonamides, but will not give X-ray therapy where they are used at this time. If they must be used, they should be used alone until more study of the problem has been completed.

No harm ever has come from X-ray therapy alone as used in the treatment of acute fulminating infections.

There is a rapidly accumulating literature to support the data presented in this communication. To assist in clarifying any points of controversy which may arise in this study, all are urged to report their cases in detail in the literature.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

Solution of Incrustations and Calculi in Alkaline Cystitis. S. F. Wilhelm and Bernard Levine. Journal of Urology, March, 1942.

Alkaline incrusted cystitis is caused by urea-splitting bacteria, forming ammonia in the urine, increasing the alkalinity, causing the precipitation of calcium, magnesium and ammonium, phosphatic and carbonic salts. Necrotic tissue and foreign bodies, such as catheters and drains, tend to encourage these phosphatic salt deposits. Urinary stasis also tends to contribute to the deposit of these salts. Infected open bladders, following prostatectomy and bladders of resected cases, fulfill the conditions favorable for the development of incrusted cystitis.

This report is based on the observation of nine cases, eight of which had operations upon the bladder, and one had repeated catheterizations.

The bacillus proteus and the enterococcus were the predominant infecting organisms. Staphylococcus albus hemolyticus was the only organism in one case.

The treatment of this condition has always taxed the medical resources of the physician. The treatment should control and eliminate the infection, dissolve, and remove the incrustations, protect the skin, and prevent recurrence.

The sulfonamide group of drugs, the acidifiers, methenamine, and mandelic acid have proved of little value in these infections where calculi and obstruction are present.

Irrigation with dilute phosphoric acid solution was used in four of these cases with improvement in two.

Six cases, including one which had twice recurred, were treated with irrigations and instillations of sodium citrate-citric acid solution (sodium citrate 45.2 grams, citric acid 38 grams, distilled water to make 1,000 cubic centimeters). These cases, without exception, showed marked improvement within a short time and there have been no recurrences.

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THE DIAGNOSIS AND TREATMENT OF PULMONARY FUNGUS INFECTIONS*

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During the past few years a number of articles on mycotic infections have appeared in the literature. I have reviewed the literature on two occasions. This condition is rapidly coming to the front as one of the major differential problems in diseases of the chest. It is true that there seems to be a regional distribution of these infections, and doubtless there are some in this part of the country. This condition closely simulates sarcoidosis and often cannot be differentiated from tuberculosis, primary or metastatic malignancy. An incorrect diagnosis often results in prolongation of suffering, which might have been amenable to treatment and a favorable prognosis.

Over one hundred years ago, 1839, Lagenbeck reported the fungus of thrush, oidium albicans, and found it to be parasitic to man. Ramsbottom, keeper of the botany department of the British Museum, reported as having on record one hundred thousand known and named species of fungi. Only a few, however, are parasitic to man. The most common of these, in the order of frequence, are: monilia, coccidioidal granuloma (which occurs chiefly in California and the Midwest), actinomycosis, blastomycosis, aspergillus. There are many less common ones which are very infrequently found.

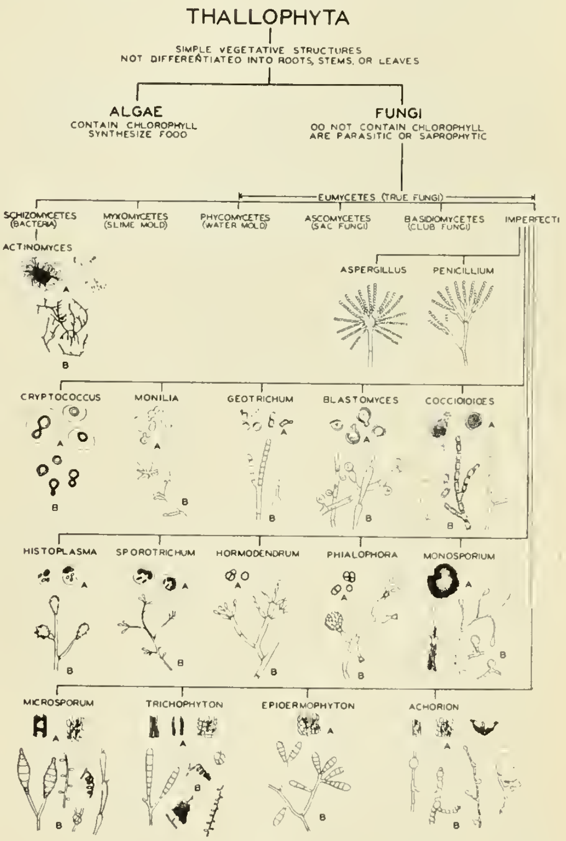

Chart I.
(With permission of the American Roentgen Ray Society)

As is seen in Chart I, the true fungi consist of tubular-branched filaments, hyphae. The protoplasm is contained in thin, limiting membranes. The vegetative body of the fungus shows numerous hyphae, termed mycelia. The mycelium may be loose and weblike, as in common molds or branched and interweaving. In the more highly-organized fungi, the hyphae show numerous septa, which is their means of propagation and division.

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Mode of Infection

The mode of infection of the lungs is usually due to aspiration or inhalation of the spores, setting up primary foci in the lungs. The dissemination may then occur through the blood and lymph channels, and may involve any organ in the body. Gastric washings are frequently necessary to obtain material for study. The lungs, skin, bones, and lymph nodes are the most commonly affected. Cavitation often occurs in the lungs and, with the surrounding infiltration, is indistinguishable from tuberculosis.

TYPE	CASES	AGE IN YEARS	SEX		DURATION OF SYMPTOMS	LUNG INVOLVEMENT	LIVING CASES
			M	F			
ACTINOMYCOSIS	10	8-66	8	2	7 WEEKS TO 3 YEARS	6	2
BLASTOMYCOSIS	16	12-53	13	3	6 WEEKS TO 3 YEARS	10	3
MONILIA	40	⅓-65	21	19	1 MO TO 5 YRS ONE 15 YRS	24	16
ASPERGILLUS	5	26-47	3	2	4 MONTHS TO 1 YEARS	3	3
SPOROTHRIX	3	7-46		3	8 MONTHS TO 8 YEARS	1	1
GEOTRICHIUM	2	25-25	1	1	2 TO 3 YEARS	1	1
TORULA	1	25		1	6 MONTHS	1	0
*COCCIDIOIDAL GRANULOMA	2	42	1			1	0

*OUTSIDE CASES - X-RAYS

Chart II.

Monilia infection is the most common of these infections in our locality. This disease has its origin in the oral cavity and is often nonpathogenic to the host. The infection invades both lungs with a diffuse nodular studding throughout the lung. If untreated, it gradually produces a chronic interstitial fibrosis.

Case I. A. T., a white female housewife, aged forty-four, complained of malaise, fatigue, loss of weight, and cough for two months prior to admission. Two years before admission, the patient had a bout of febrile illness, lasting five weeks, featured by a productive cough. She was given large doses of iodides, and her symptoms subsided. With the onset of her present illness, she was again given iodides, but developed a dermatitis. At this time, the sputum, skin tests, and serum agglutinations were negative until after she had had anti-monilia rabbit serum, when she became extremely sensitive to immune serum. The sputum was loaded with monilia albicans. She was given intravenous gentian violet, three milligrams per kilogram of body weight, for three doses. A transient thrombosis developed. She was desensitized with immune rabbit serum and started on small doses of iodides, with prompt clearing of the lesions. She has remained well. (Slides, organisms.)

Blastomycosis infections occur second in our locality. This disease appears usually in the bronchi through inhalation of the spores, but often finds entry through the skin or alimentary tract. The infection may manifest itself by an insidious, chronic condition or may be acute with rapid onset. The clinical symptoms may also simulate any acute disease, while the chronic type produces malaise, cough, pain in the chest, and irregular fever. The X-ray changes in the lungs may be a diffuse nodular infiltration or a consolidation. The organism may be found in the sputum or obtained by bronchoscopic examination. The skin tests and blood agglutinations should be positive. When smears and biopsy are negative, cultures are made on blood agar. The sera of five out of six cases reported by Martin and Smith contained complement-fixing antibodies for seven strains of blastomyces dermatitides. This offers the possibility of diagnosing by complement fixation when there is no material available for culture or biopsy.

The treatment consists of first desensitizing the patient with small doses of vaccine or a polysaccharide and then giving iodides. The skin lesions respond very rapidly to iodides and X-ray therapy. In some cases the pulmonary lesions have responded more readily to this combination.

Case II. V. S., a white female, aged twenty-seven, complained of pain in the chest and productive cough, gradually increasing over a three-month period. Her past history was negative except her present illness, which started as a kidney colic of one week's duration. This was followed by a fall, which wrenched her back. This was followed by a lung infection, high fever, and a productive cough. The sputum was mucopurulent, but no tubercle bacilli were found. A roentgenogram disclosed a dense consolidation radiating out from both hila. A bronchoscopy was negative, but the sputum showed definite blastomyces. Another patient's vaccine, one-tenth cubic centimeter intradermal, was positive in twenty minutes. Complement fixation with serum was positive.

Treatment.—She was desensitized with Lucas vaccine, one-tenth cubic centimeter twice daily, increasing up to eight-tenths cubic centimeter for a total of eighteen injections. This was followed by ethyl iodide inhalations, up to three cubic centimeters three times daily. An iodide reaction developed, and the drug was discontinued and deep X-ray, in small doses, started. The back pain continued, and an X-ray showed a partial collapse of the twelfth thoracic vertebra. This necessitated remaining in a cast for three months. Cough and sputum disappeared, and the patient showed a gradual improvement. She has now been well eight years. (Slides and organism.)

Actinomycosis is frequently found about the jaws and in three patients, primary in the appendix, but only six cases have presented pulmonary manifestations. The pulmonary lesions are usually dense, consolidating masses, arising in the perihilar lymph nodes and invading the lungs and frequently breaking down, leaving large cavities. Examination of smear or the sputum shows the sulphur granules. Culture shows both the clumps of granules with many mycelid.

These cases may also be desensitized to their infection before therapy is started. Some writers find, however, that the normal person is often more sensitive than those having the disease. We have not desensitized our cases. The iodides, combined with X-ray therapy, offer best results. In a recent article good results were claimed using sulfapyridine, followed by X-ray therapy. We did not find this satisfactory.

Case III. G. B., aged eight years, came in with a history of having been lost in a wheat field and getting a wheat straw lodged in the throat two years previously. This was followed by a low-grade fever, pain in the chest, and, in a few weeks, draining sinuses appeared in the anterior chest wall and about the right hip. The sputum was copious and thick. Many sulphur granules were found. X-ray of the chest showed a large cavity in both upper lobes and a diffuse pneumonitis around the cavity. Potassium iodide, ten drops three times daily, was started, and ethyl iodide inhalations were given. This was combined with X-ray therapy over the draining sinuses. There was gradual improvement of the skin lesions, and the cavities gradually closed. She is now well. (Slides and one of lesion.)

The aspergillus infection is frequently found in the great wheat belt. The lesions in the lungs were once called Wheatena because of the fact that, as the lesions healed, small calcified areas appeared in the lungs. This infection is more common through the Middle West.

Coccidioidal granuloma is endemic in certain parts of the United States, chiefly California, but is frequently found throughout the Middle West. It is also acquired through inhalation of the spores and, when primary in the lungs, often runs a rapid course and treatment is ineffective.

The other less common fungi, sporothrix, torula, geotrichum, and histoplasma, may be detected only by careful search and studies by a trained mycologist.

METHOD OF TREATMENT

The treatment of all the mycoses consists in the administration of iodides and other agents. The monilia and blastomycosis infections must be desensitized first. The monilia vaccine is obtained simply by washing the sabroud slant culture in normal saline and killing the organisms in the filtrate. The patient is skin tested with a one-tenth solution, and, if a sharp reaction is obtained, he is desensitized with smaller doses and then started on potassium iodide.

The blastomycosis vaccine is made up by simply preparing the filtrate and killing the organisms. Any stock vaccine works just as well. The combination of iodides and X-ray therapy in small doses has been found to be very effective in treatment of blastomycosis and actinomycosis. The fact that local lesions clear, however, does not mean that the systemic disease can always be controlled.

NEUROSURGERY AND THE WAR*

COBB PILCHER, M.D.,† Nashville

I venture today to discuss the subject of neurosurgery and the war for a number of reasons.

First, a considerable proportion of military neurosurgery must, of necessity, be done by men without special training in this field. Naturally, the military services hope to have adequate trained personnel to carry out the more extensive neurosurgical procedures in hospitals of definitive treatment. However, neurosurgical cases must receive first aid and other temporary treatment before reaching such stations, and the less serious cases may be treated without being transported to hospitals far to the rear.

Second, for similar reasons, a high percentage of civilian head injuries must be and are treated by the general surgeon or practitioner. These injuries present problems similar to those of military neurosurgery.

Third, among war casualties there is a much higher incidence of head injuries than in civilian practice. At least twenty per cent of such casualties present neurologic problems.[1]

Fourth, with the country at war, the medical profession is, I know, keenly interested in all phases of military medicine, and neurosurgery may be considered as an example of organization and progress in all fields of medicine and surgery.

I need not say that I do not discuss this subject as an authority on either neurosurgery or the war, but as a neurosurgeon with a long-standing interest in head trauma and cerebral wounds, who has had the good fortune to learn something of the civilian, governmental, and military activities in this particular field. I propose to outline some of these activities and subsequently to discuss recent advances and present-day methods of treatment.

ORGANIZATIONAL CONSIDERATIONS

Medicine is the one profession which, in war, devotes its efforts to reconstructive and lifesaving, rather than destructive, activities. It is, therefore, not surprising that, in the present situation, as in the past, the medical profession has, with great promptness, devoted its wholehearted assistance to our country.

The National Academy of Sciences was created by Congress at the request of Abraham Lincoln in 1863, and under it Woodrow Wilson established the National Research Council in 1916. In June, 1940, President Roosevelt instructed the National Research Council to establish advisory committees and subcommittees composed of recognized authorities in the various special fields of medicine. These committees were set up at once, among them a Subcommittee on Neurosurgery. The latter met immediately and entered into a number of activities. A manual of neurosurgery was prepared, an exhaustive list of special instruments and equipment recommended (and, I may say, subsequently adopted as routine equipment by the Army, almost without alteration), and an extensive survey of neurosurgical personnel throughout the country carried out.

In the autumn of 1941, a large sum of money was made available for medical research through the Committee on Medical Research of the Office of Scientific Research and Development. Allocations of these funds have been made on recommendation of the various committees of the National Research Council. Already, a vast program of research in all phases of military medicine is under way in laboratories and institutions throughout the country.

Liaison officers from the armed forces and other governmental medical agencies have attended all committee meetings, presenting questions, problems, and needs for consideration and recommendation by the committees. Intimate cooperation has been maintained with similar committees in Great Britain.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

†From the Department of Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee.

In a special field such as neurosurgery, the problem of obtaining trained personnel for military purposes is a serious one. There are fewer than two hundred highly capable neurosurgeons in the country, whereas the Army alone will require many hundreds. Fortunately, there are numerous young surgeons who have had periods of training in neurosurgery in the course of their general surgical training. These men have been carefully listed and are, for the most part, available. It is hoped they may be given an additional brief period of intensive instruction in traumatic neurosurgery.

Needless to say, similar extensive activities have been carried on in the other special fields of military medicine.

As this audience well knows, the Procurement and Assignment Service has been established for the purpose of furnishing the armed services and other agencies with the physicians who can best be spared in positions for which they are best fitted. With the assistance of the American Medical Association and the National Roster, this service has readily available, in a mechanized punch-card system, full data on virtually every physician in the United States. I fully believe that there will be few "medical misfits" in this war. It is also notable that procurement of medical personnel is carried on entirely on a voluntary basis.

An additional important organizational activity has been the establishment of a number of hospital units affiliated with medical schools throughout the country. Neurosurgery, like other specialties, is, of course, represented in these units.

RECENT DEVELOPMENTS IN TRAUMATIC NEUROSURGERY

It is not my intention to review the extensive recent literature in this field or to consider in detail specific advances, but rather to point out briefly a number of significant developments as an indication of progress already made and of increases in knowledge yet to come.

No phenomenon in medicine has been more puzzling than the mechanism of "concussion," the sudden unconsciousness which immediately follows a blow on the head. In England, Denny-Brown and Russell[2, 3] have shown conclusively that this unconsciousness results from sudden acceleration or deceleration of the head. In other words, if the head is fixed in position, unconsciousness does not supervene, no matter how severe the blow. The experiments of Denny-Brown and Russell were stimulated by the observation that a man whose head was severely crushed while he was lying on the ground did not lose consciousness.

It seems likely that the unconsciousness resulting from rapid changes in spatial relationship of the head is similar in mechanism to the "blackout" experienced by military pilots in "pulling out" of a power dive.

In this same connection, Mahoney[4] has found deposits of fat in the arterioles of human and animal brains subjected to acute trauma and believes this is related to the phenomenon of concussion.

Another interesting development has been the so-called "nerve-glue" suture of peripheral nerves by Young[5, 6] and his associates at Oxford. By this method severed ends of nerves are firmly held together by a cuff of viscid concentrated plasma which quickly forms a firm coagulum. The trauma of actual suture is thus avoided. The method is most applicable to small nerves which are not under great tension.

Extensive studies of the phenomena associated with "blast" injuries are in progress in England and in this country as are also wide investigations of the neurologic aspects of aviation medicine. In the latter connection the evacuation of the wounded by airplane has been employed extensively by the Germans and no doubt will be by our forces, but it has been pointed out by Tönnis,[7, 8] of the German army that cerebral wounds do badly at high altitudes, where the low pressure may increase cerebral herniation.

The use of vitallium plates to fill defects in the skull has been a rather recent development[9, 10] and another metal, tantalum, gives promise of being even more valuable.[11, 12]

By far the most important advance in the modern treatment of wounds, however, has been the advent of the chemotherapeutic agents of the sulfonamide group. In addition to their wide fields of usefulness, when administered orally and intravenously, the value of their direct introduction into contaminated wounds, especially those associated with compound fractures, has been clearly shown by many investigators.

However, the usefulness of these drugs when applied directly to the tissue of the central nervous system is by no means established and certain potential dangers exist. Recent experimental observations in our laboratory suggest the wisdom of awaiting more complete investigation of this subject. Such investigations are being carried on in several institutions in this country. Some early results obtained by Markley[13, 14] and by Koskoff and Wall[15] are promising, but Hurteau[16, 17] has shown the very limited absorption and dissemination of the sulfonamide drugs when introduced into the central nervous system.

Meantime, the value of oral administration is well established and is believed to have reduced greatly the mortality and morbidity of casualties in Europe. Incidentally, contrary to recent newspaper reports, all American soldiers in combat zones carry supplies of these drugs with specific instructions for taking them.

THE TREATMENT OF HEAD INJURIES

To dwell in detail on the therapeutic measures required in the innumerable types of craniocerebral injuries would require a large volume, but it may not be inappropriate here to summarize the accepted essentials in basic therapy of common traumatic conditions.

Contusion of the Brain.—In modern warfare, with its great emphasis on aerial bombardment, the so-called "closed" head injuries occur with great frequency, and in civilian life they constitute the great majority of all cases of craniocerebral trauma. The treatment of these cases is still a matter of controversy among neurosurgeons, a controversy which I have discussed elsewhere.[18, 19, 20, 21] On only one point is there general agreement: in the absence of hemorrhage or compound or depressed fractures, operative treatment is rarely, if ever, indicated.*

Without reviewing the controversy, it may be said that, in my opinion, rest, sedation when required, treatment of shock, suction or postural drainage of respiratory secretions, early administration of fluids and food by nasal catheter, and careful observation for signs of hemorrhage constitute the most important elements of therapy. The occasional judicious use of spinal drainage and of hypertonic solutions is valuable, but these methods are not without danger. Further, they are unnecessary in most cases, and I believe their routine employment at short intervals is to be condemned.

Intracranial Hemorrhage. — Bleeding in closed head injuries which requires surgical intervention may be extradural, subdural, or, less commonly, intracerebral. Extradural hemorrhage is usually from the middle meningeal artery and results in rapid compression of the brain and formation of a huge clot. It is usually characterized by a "lucid interval," followed by rapidly-developing unconsciousness, contralateral hemiplegia, rising blood pressure, stertorous, labored respirations, and bradycardia. Unless immediate evacuation of the clot (through a subtemporal opening) and control of the bleeding are effected, the termination is nearly always fatal.

Subdural hemorrhage, on the other hand, is usually venous and may manifest itself only long after the injury. If unoperated, it becomes a chronic subdural hematoma, which is encapsulated and which gradually enlarges, presumably by osmosis. In the acute and subacute stages, subdural hematomas can often be evacuated through multiple burr openings,[23, 24] but, in the chronic stage, open exploration and complete removal are usually necessary. It must be remembered that fifty per cent of subdural clots are bilateral.

If a patient with a head injury has a hemiplegia and severe pressure signs, and if exploratory burr holes have not revealed either extradural or subdural hemorrhage, it is always wise to explore for a subcortical clot with a blunt cannula. This is particularly true if the patient has Jacksonian convulsions or if the paralysis is confined to one arm or one leg.[25]

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*Exception is taken by Dandy,[22] who believes that subtemporal decompression should be performed in many such cases.

Fractures of the Skull.—Fractures of the skull are of importance only in so far as they may be directly related to injury of the brain. In only two types of fracture is there such a direct relationship—namely, depressed and compound fractures.

Depressed fractures may be associated with lacerations of the dura or with small undiscovered hemorrhages, or they may merely produce a localized cerebral compression without symptoms. Following any of these changes, however, there is a subsequent formation of scar tissue, varying from slight, simple gliosis to massive necrotizing cysts and dense adhesions. Any of these cicatricial developments are very likely to produce late traumatic epilepsy, chronic headache, and the numerous vague symptoms which are often attributed to post-traumatic neurosis. For this reason, all depressed fractures should be elevated or the depressed bone removed as soon as the patient has recovered from the immediate effects of the injury.

Compound fractures, on the other hand, are surgical emergencies.* Even a simple linear fracture of the vault, if it communicates with an open laceration, should have immediate closure of the wound, without drainage, after thorough cleansing and removal of foreign material and macerated tissue. In wartime, many wounds of this type (as well as simple lacerations of the scalp) can be treated in advance stations and returned to duty after a few days' observation. Chemotherapy should be instituted and continued for at least a week.

More extensive compound fractures, with laceration of the dura, are clinically identical with the penetrating wounds to be discussed below and should be treated in the same way.

Penetrating Craniocerebral Wounds.—During the latter part of the war of 1914-1918, Cushing[26, 27] reduced the mortality rate of penetrating wounds of the brain from an appalling sixty per cent to twenty-eight per cent.[1] This was made possible not only by the introduction of newer and better technical methods, but by sticking to old and established principles—thorough, careful debridement, complete hemostasis, and meticulous closure of the wound. In following the precepts of good surgery, the military neurosurgeon, more than any other military surgeon, must face a choice between many hasty and incomplete operations and fewer careful, thorough procedures. I need not tell this audience that the latter alternative, in the final analysis, not only will have the lower mortality rate, but will restore a larger total of men to a normal physical and mental state.

Since the time of Cushing's war experience, two outstanding advances have been made: the introduction of electrosurgery by Cushing[28, 29] himself in 1927 and the advent of the sulfonamide chemotherapy.

An extensive bibliography of the subject of penetrating wounds of the brain through 1935 was published in another paper.[30] More recent publications have included those of Dott,[31] Cairns,[32] Coleman,[1] Horrax,[33, 34] Cloward,[35] Tönnis,[7, 8] and Pilcher.[36] In this paper time permits only a summary of the basic principles of treatment.

1. The early transportation of severely wounded cases is much less dangerous than either hasty operation with inadequate equipment, perhaps by an inexperienced surgeon, or delay in awaiting improvement in the patient's condition. Simple first aid, measures to combat shock, and rapid evacuation to a station of definitive treatment are essentials.

2. The time factor is of pre-eminent importance. A high percentage of wounds adequately treated within the first twelve hours will heal per primam. Most of those treated later will become infected.

3. Debridement should include excision of macerated scalp, removal of loose bone fragments, thorough cleansing of the tract of the missile by the suction-irrigation tech-

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*Exceptions are fractures of the base with cerebrospinal fluid otorrhea or rhinorrhea. In the former, the dural laceration cannot be closed. In the latter, closure is usually unnecessary and, in any event, should be delayed.

nic, and removal of all *accessible* foreign bodies. The damage already done should not be increased in order to remove retained missiles. Hair, bits of clothing, dirt, and bone fragments are more dangerous than bullets, since the latter are likely to be sterile.

4. Hemostasis must be absolutely complete, if possible.

Electrocoagulation, bone wax, and patient pressure with moist cotton packs are the most useful methods.

5. Repair of dural defects by periosteal or fascial transplants must depend upon the condition of the patient, the size of the defect, and the exigencies of the circumstances. Repair of bone defects should never be carried out at the primary operation.

6. Closure should be meticulous, with particular attention to the galea aponeurotica. Extensive plastic procedures, such as the "Isle-of-Man" incision, may be necessary. Drainage should never be instituted in early cases.

7. In wounds which are already infected, establishment of open drainage offers the only hope of recovery.*

8. Chemotherapy by oral or intravenous administration should be instituted at the earliest possible moment and continued so long as danger of infection exists. The implantation of the sulfonamide drugs into cerebral wounds is not yet an established procedure as already stated.

Prognosis.—Many patients (perhaps the majority) with severe acute head injuries do not present the textbook picture of increased intracranial pressure, and the severity of the injury cannot be judged on this basis. In an effort to determine the prognostic value of the signs which are observed when the patient is first seen, Pilcher and Angelucci[37] recently published a detailed analysis of the early physical findings in 373 cases of acute craniocerebral injury.

They found only one sign which is almost invariably present in the most seriously injured cases and which is very rarely present in mildly injured patients. This is irregular, periodic, or labored respirations. When present, this sign points to a grave prognosis.

In addition, the following disturbances occurred in a high percentage of seriously injured cases: temperature above 103 degrees Fahrenheit, pupillary abnormalities, severe paralysis, and compound fractures (including penetrating wounds). Changes in blood pressure and pulse rate were much less reliable and low pressure and rapid pulse (i.e., shock) were more significant than the opposite changes.

In penetrating wounds, it is obvious that additional factors influencing prognosis are elapsed time between injury and operation, depth of penetration, and location and extent of the wound.

The prognosis as to morbidity is a highly uncertain element. All too often, even after mild injury, the patient subsequently develops chronic headache, traumatic epilepsy, severe psychoneurosis, or psychosis. It is these conditions which, in and after wartimes, lead to loss of men for military service, prolonged or permanent disability, and ever-mounting governmental expenditures for pensions, hospitalization, and medical care. The problem of these sequelae deserves (and is receiving) profound and extensive study. Undoubtedly, the best treatment is prevention by exclusion of unstable and neurotic individuals from the armed forces and by early and competent operative handling of penetrating wounds. Late treatment is still, for the most part, unsatisfactory.

CONCLUSION

This kaleidoscopic and, I fear, none too coherent paper has done little more than scratch the surface of the many aspects of only one special field of medicine in a world at war. To the present-day subjects already discussed, I wish to add one parting injunction regarding the future.

War, with its dreadful destruction of life and of health, offers unlimited opportunity for clinical observation and for advances in learning in the field of scientific medicine. If medicine is to justify its existence, it must study its cases, record its findings, investigate its dilemmas, and emerge into a world finally at peace with an enlarged armamentarium, a broadened scope of knowledge, and an undiminished determination to reduce the sum total of human suffering.

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*It is possible that chemotherapy may yet alter this principle. See No. 8.

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DISCUSSION

DR. R. EUSTACE SEMMES (Memphis): Since the time limit prevented Doctor Pilcher from considering spinal cord injuries, I thought it might be worth while for me to spend my five minutes in outlining the management of this type of injury.

When a patient has had an injury to his spine involving the spinal cord or has received a gunshot or stab wound in this region, the following questions must be answered: (1) the extent of the interruption of cord function, (2) the level, (3) whether a severance or a destructive lesion exists, and (4) whether pressure still is being exerted upon the cord. All of these may be determined within an hour of admission. Needless to say, handling and transportation from the place of injury to final disposition should be minimal and of such nature as not to damage the cord further.

The manner and degree of injury, whether paralysis and anesthesia appeared instantly or gradually, throw light upon the probable nature and extent of the cord damage. Determining the completeness and level of sensory and motor loss (physiologic block) is a matter of but a few minutes. In fracture dislocations of the spine, abnormal separation and displacement of the spinous processes usually can be seen and felt. Roentgenologic studies directed at the proper level show the condition and position of the vertebrae, presence of impingement upon the canal, angulation, and rotation, indicating whether the amount of offset or impingement is so great that severance or a destructive lesion must have taken place. While the X-ray films are being developed, lumbar puncture will show whether the fluid is bloody, and a Queckenstedt test will demonstrate the existence of a complete or partial blocking of the subarachnoid space (fluid block) if present.

If neurologic examination indicates severe cord injury and if the Queckenstedt test shows a fluid block, demonstrating an obstruction from pressure or impingement, an immediate laminectomy should be done unless the amount of offset or angulation makes a destructive lesion of the cord certain. To wait for signs of improvement may lose the patient's chance for recovery.

Various complications associated with cord injuries must be considered.

Shock.—Shock is almost never present, even in high injuries to the spinal cord, unless there is some other associated injury, loss of blood, etc. Damage to the spinal cord *per se* seldom, if ever, causes shock. The pulse is usually slow, full and regular. The blood pressure usually is maintained at normal level, in spite of extensive vasomotor and muscular paralysis.

Respiratory Difficulties.—When the injury is in the cervical region, paralysis of intercostal muscles is the rule. Occasionally even half of the diaphragm may be paralyzed. Respiratory embarrassment is increased in these cases by abdominal distention against which the diaphragm must push. Relief of abdominal distention and increased oxygen content of the inhaled air will give relief.

Abdominal Distention in High Cord Injuries.—An acute Hirschsprung's disease is simulated. This can be forestalled by the use of eserine, prostigmin, colon tube, and Wangensteen drainage. Hypertonic intravenous solutions may be indicated or even spinal anesthesia in extreme cases.

Urinary Apparatus.—Initial suppression may result. This may be followed by polyuria in a few days. Overdistention is at first present with overflow and automatic evacuation later. Urinary antiseptics should be started before catheterization, which should be done only when the bladder is full and an indwelling catheter used if polyuria develops. Tidal drainage is useful. Suprapubic cystostomy is not necessary if the patient is seen early and the foregoing management carefully followed.

Thermal Disturbances.—The hyperpyrexia of high cord injuries is due to paralysis of the sweating reflex. The temperature may be kept down by wetting the body as the room temperature requires.

Decubitus Ulcers.—These are not trophic, but are due to pressure ischemia and do not develop if pressure is prevented over the bony prominences. The damage may be done in a few hours if a thin person is allowed to lie on a Bradford frame or even a hard bed. Treatment for bed sores is to keep them clean and to remove the pressure which has caused them.

Muscular Atrophy and Contractures.—When the cauda equina or nerve roots have been damaged or the anterior horn cells, the flaccid paralysis resulting requires the usual care for paralyzed muscles to prevent atrophy and fibrosis. Appropriate measures for the prevention of contractures and stiff joints are indicated.

Laminectomy.—Laminectomy may be carried out in these cases under local anesthesia with very little risk. The patient usually is made more comfortable by freeing the nerve roots which may be involved and is given the maximum chance for recovery. Decision to operate, of course, must be dependent upon the availability of proper equipment, teamwork, and a surgeon of sufficient experience.

DR. NICHOLAS GOTTEN (Memphis): Doctor Pilcher, who has had extensive experience both in practical and experimental fields of neurological surgery, has given us an excellent preview of military neurosurgery. I can only affirm all that he has said and emphasize his statement that most of the head and central nervous system injuries will not be repaired by neurosurgeons. In that behalf we are fortunate that so large a number of recent graduates have had some experience of this sort in their routine hospital training.

I am going to mention two or three phases of cerebral injuries that Doctor Pilcher did not have time or space to dwell upon. First, that of the pathology in the so-called mild cranial injury cases, namely, concussion. Here, even though there is little gross evidence of injury, microscopically, there may be swelling of the ganglion cells, minute petechial hemorrhage, and focal areas of softening and edema. I believe that it is these microscopic but generalized injuries that cause so many of our post-traumatic sequelae, such as epilepsy, headache, vertigo, insomnia, and the summation of these symptoms into the post-traumatic neurosis.

In this connection, it is well that, while considering the acute war injuries, we look ahead to the equally important phase of the chronic post-traumatic case. We all know these patients—they are like the poor—always with us. Literally thousands were never rehabilitated after the first world war, and even now, I occasionally see one whose complaints began with an injury in France and whose symptoms are still persistent. These patients cause the general practitioner to lose his religion, the psychiatrist to exhaust his terminology, and the neurosurgeon to lose his enthusiasm. It may be, as Doctor Pilcher has inferred, that many of these men are not stable personalities, but, on the other hand, many were. I have in mind a young doctor, physically strong, emotionally stable, successful, and contented. Since a severe head injury, he is a typical psychoneurotic of the worst type. One can well imagine that the cause of his so-called "neurosis" is generalized brain damage which has made him inadequate to master his former social responsibilities. There is insufficient time to discuss the therapy of this phase of head trauma, but suffice it to say, it will tax the ingenuity of all of us, so we should begin to give it some thought.

DR. THOMAS D. McKINNEY (Nashville): Mr. President and Members of the Society: I will take just a moment to emphasize one or two points mentioned by Doctor Pilcher in his paper, and also by Doctor Gotten in his discussion. First, the very limited number of trained, experienced neurosurgeons available for the enormous amount of neurosurgical work required in wartime. This fact means that a large per cent of the work has to be done by men who are not highly trained in the field of neurosurgery, and it is here that I would like to emphasize the importance of an educational program for special training of medical officers in this field, with formulation of rules and regulations for the management of the injured soldier in this early stage when he has not yet reached the hands of the trained neurosurgeon.

It is during this early stage that most can be accomplished for the patient in lowering both the mortality and the morbidity. This involves the reestablishment and maintenance of adequate circulation to nerve cells and tissues. Fundamentally, it is a problem of supplying adequate nutrition and oxygen to these tissues. It is known that certain nerve cells will not survive for a period longer than a few minutes when completely deprived of oxygen. Therefore, during this early stage it is highly important that every effort be directed toward the treatment of shock and the control of increased intracranial tension, avoiding, if possible, anoxemia and anoxia of tissues, which result in irreparable damage to nerve cells. During the past year, before the Nashville Surgical Society, I ventured to propose a new term for this lack or dearth of oxygen supply to tissues. It seems the term, "oxypenia," more accurately describes the condition of the tissues and the cells than the more generally used term, "anoxia," which may be construed to mean either a partial or total lack of oxygen.

The neurosurgeon's battle begins with an early attack on the problem of oxypenia, and this fight must be continued throughout all stages of treatment.

DR. COBB PILCHER (closing): I am very grateful to Doctor Semmes, Doctor Gotten, and Doctor McKinney for their discussions. I am particularly glad that Doctor Semmes discussed the cord injuries. This subject and that of peripheral nerve injuries were deliberately omitted from this paper because of lack of space and time.

With regard to wounds and injuries of the spinal cord, one point may be additionally emphasized, namely, that surgery in spinal cord injuries can hope to accomplish only one purpose, namely, decompression. We know from experience that spinal cords which have been severely contused, with immediate loss of function at a transverse level, and, of course, spinal cords also which have been divided, will never regenerate functionally. For that reason, the only cases which are amenable to surgery are those which do not have immediate complete loss of function, but which have a gradually developing loss of function, such as one might expect with the development of a hematoma, for example, or with gradual additional dislocation of fractured fragments which produce increasing pressure on the cord.

From the standpoint, then, of the surgeon, there are two factors which determine whether or not he should operate. One is whether immediate paralysis occurred or whether it came on gradually. The second is whether the Queckenstedt test is positive; that is, whether there is a block in the flow of cerebrospinal fluid. If there is not a block, then the cord is not still compressed and will not be helped by decompression.

With regard to Doctor Gotten's comment, I think it is most important for us to recognize that there may well be an organic basis for many of the so-called post-traumatic neuroses. Many, it is true, as I intimated in the text of the paper, have such a neurosis on the basis of a pre-existing unstable personality, but many others, as Doctor Gotten pointed out, do have definite organic pathologic changes which may well have to do with subsequent functional or apparently functional disturbances.

It is not my purpose to go into the realm of psychiatry here, but I feel sure that we will find, as time goes on, that more and more so-called psychiatric conditions have a distinct organic basis.

Doctor McKinney has brought up again the question of the training of personnel. This subject has lagged somewhat behind other preparations made by this country for war, but perhaps that has been due to the fact that too many other things have claimed priority. At any rate, I should like to assure this audience that it is being thoroughly and profoundly considered, and that plans have not only been made, but are about to be consummated in this regard.

WAR AND THE NUTRITION OF THE NATION*

JAMES S. McLESTER, M.D.,† Birmingham, Alabama

This is total war; the entire population takes part. Success or failure depends not only on the valor of the armed forces and the excellence of their equipment, but also on the stamina and vigor of the general population. This last, in turn, depends in no small degree upon the adequacy with which the people are nourished.

This nation, therefore, cannot content itself merely with drafting its youth into its armies, training them, and providing them with ammunition and equipment. It must do more; it must see to it that everyone is well fed. The feeding of the armed forces is not difficult. The Subsistence Division of the Quartermaster's Department of the Army has arranged a garrison ration which includes almost everything of value that the market affords, is abundant in amount, and provides liberal quantities of vitamins, minerals, and good proteins. I think it safe to say that no other soldier or sailor has ever been as well fed.

In the matter of special purpose rations, however, the nutrition of the soldier and sailor presents many problems, and to offer advice concerning these is the function of the Subcommittee on Medical Nutrition of the National Research Council. This committee, with the officers of the Army and Navy who take part in its deliberations, has been very much interested in the field ration and in the ration for mobile troops, as well as the ration of troops serving under extremes of temperature. The field ration consists of previously cooked or prepared food packed in hermetically sealed cans. It may be eaten either hot or cold. Each ration, that is, the food for one soldier for one day, consists of six cans; three of these contain a meat and vegetable stew or hash and three contain crackers, sugar, and soluble coffee. This ration is thoroughly palatable and is fully adequate.

More difficult to arrange has been the mobile troop ration, which, in this day of mechanized warfare, is extensively used. The food must be palatable and nutritionally adequate; it must have no thirst-provoking qualities; and it must be compact and stable. Colonel Isker and his associates in the Subsistence Division of the Quartermaster's Department have shown great ingenuity and skill in devising a ration consisting of several components packed in a conveniently-carried container. It includes "defense biscuits," which are palatable and highly nourishing, compressed meats, malted milk tablets, soluble coffee, and other foods. It is well balanced and provides adequate amounts of vitamins, minerals, and proteins. The day's ration carries 3,500 calories.

The use of multiple vitamin preparations has been much discussed. Acting on the advice of the Council on Foods and Nutrition of the American Medical Association, the subcommittee has recommended to the surgeons general that vitamin capsules of appropriate composition be administered when needed one to three times daily under the direction of the Medical Corps.

It should be added, however, that the subcommittee has reviewed with interest the work of Keys of the University of Minnesota, who has shown that nothing is to be gained giving vitamins to the already well-nourished soldier living in a normal environment. No increase in strength or endurance can be achieved. Under ordinary conditions it is believed that all nutritive essentials in adequate amounts can be obtained from simple food.

The problem of feeding the general population is equally important, for vigor and stability in the people and industrial efficiency in the workers are essential. That there is genuine opportunity for improvement in the American diet is abundantly evident. True, frank deficiency diseases are rare in America, but the borderline states of nutritive failures, states in which the person is neither grievously sick nor entirely well, are relatively frequent. It is in part to prevent the nervous instability and the lack of efficiency which accompany these states that the government is giving constantly greater attention to nutritive problems.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

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The problem of supply comes first, that is, the problem of producing the food and getting it to the people. This is a question of agriculture, commerce, and transportation, all of which in the last analysis is a problem of government. Gradually, governments are coming to realize this and are bending every effort to encourage the production and distribution not only of all foods, but more especially of the protective foods, milk, eggs, meats, and green vegetables. Dried foods offer a possible solution to many of these problems, but in the present state of the industry such foods are not often dependable. Properly dehydrated fruits and vegetables retain all of their nutritive essentials in good measure, but reports of examinations made of the produce on the market today indicate that the processing is not always carried out efficiently and that the products purchased are often grievously lacking in essential nutrients.

Education, too, is an important factor. Even the economic problem can in part be solved by education, for with proper guidance the housewife can learn to make a highly-restricted budget stretch far in the purchase of nutritious foods. The most expensive articles are not necessarily the most nutritious. Large red apples, the best cuts of meat, and neatly-packaged breakfast foods are not bargains in food value. The housewife should know this and should learn that there is ample room for discrimination in buying the family's food. Fads, fancies, tabus, and customs, both familial and racial, as well as simple ignorance, must be overcome. This program demands the participation of many agencies, but, above all, it demands the sympathy of American physicians.

It was largely to further such a program that about a year ago the President called the National Nutrition Conference for defense. This conference included representations from almost every field of human endeavor and every section of the population; and all phases of nutrition were discussed. The recommendations of the conference are being carried out by smaller groups, most important among which, perhaps, is the Food and Nutrition Board of the National Research Council, formerly headed by Dr. Russell M. Wilder, now by Dr. F. G. Boudreau. It was under the leadership of Doctor Wilder that this board promoted the manufacture of enriched flour. Milling processes will no doubt ultimately be developed to the point that those vitamins and minerals which are now lost in manufacture can be retained in the finished product, but at the present time it is desirable that the nutritive value of the flour as now milled be improved by adding these essential substances in synthetic form. In this process these substances are being added in such amounts as to approximate the levels of whole wheat flour, that is, thiamine 1.66 milligrams, nicotinic acid or amide 6.15 milligrams, and iron 6.15 grams to the pound. Riboflavin is provided by the milk used in the final making of the bread. To this flour has been given the name "enriched flour" and to the bread a similar designation. Both are now to be found in grocery stores and bakeries. This board has also standardized the addition of iodine to table salt (.01 per cent of potassium iodide) and, in view of the increasing incidence of endemic goiter, is recommending the more general use of this product. It also advises the general fortification of oleomargarine with vitamin A to the level of 9,000 international units per pound, and recommends that the use of oleomargarine be restricted to products which have been so fortified. These recommendations, if generally accepted, will lead, it is believed, to genuine enhancement in the stamina and vigor of the American people. If this is accomplished, then the winning of the war will be easier.

THE LOCAL USE OF SULFANILAMIDE IN SURGERY*

CHAS. C. SMELTZER, M.D., Memphis

Seventy-four years have passed since Joseph Lister[1] reported the use of carbolic acid packs in the treatment of eleven cases of compound fracture. In the interim, numerous other agents have been applied locally to wounds in an effort to combat or prevent infection. Like carbolic acid, however, most of them have been discarded, and for the same reason, namely, that if used in concentration sufficiently strong to inhibit or destroy bacterial growth, the consequent damage to the tissues outweighed the benefits. One exception to this is Dakin's solution, the buffered aqueous solution of sodium hypochlorite, which proved its value in the surgery of the first World War. Another exception is sulfanilamide and its derivatives, with which this discussion is concerned.

The exact mode of action of sulfanilamide —which is advocated by the majority of authorities in preference to its compounds— is not known, though it is believed to inhibit multiplication of the infectious organisms until the body defenses get the upper hand. Much of its effect depends upon the method of administration. Following oral or intravenous use, the blood concentration reaches only eight to fifteen milligrams per 100 cubic centimeters of blood. On the other hand, a saturated solution applied in a relatively clean wound produces a local concentration of 800 milligrams per 100 cubic centimeters, which is fifty to 100 times that obtained by oral or parenteral administration. This is practically bacteriocidal for the organisms most susceptible to the drug, and bacteriostatic to such resistant organisms as staphylococcus aureus hemolyticus. The crystal and powder forms of the drug dissolve readily in the local tissue fluids, reaching a similar concentration. These forms, moreover, are freely absorbed by the blood; twenty grams placed in a well-vascularized wound will practically disappear within sixty hours. The blood concentration rises to ten or fifteen milligrams per 100 cubic centimeters within the first few hours, then gradually diminishes as the drug is excreted. During this period, the concentration in the tissue spaces and lymphatics in the immediate vicinity of the wound varies between the local concentration and that of the blood stream, depending on the distance from the wound. When applied to grossly infected wounds, with suppuration and a pyogenic membrane, most of the drug is lost through drainage, and the blood concentration is lower than in clean wounds. In addition, it has been shown experimentally that peptones and associated products of suppuration definitely impair the inhibitive powers of sulfanilamide on bacterial multiplication. Despite this fact, when good surgical drainage can be established, frequent instillations of a saturated solution may prove beneficial. An abundance of free oxygen, supplied by irrigating the areas with hydrogen peroxide prior to application of the sulfanilamide, is thought to be of value in suppurative wounds.

The question has been raised as to whether wounds treated with sulfanilamide would not heal more slowly than those untreated in this manner. Bricker[2] and his associates reported that healing was delayed in experimentally produced wounds in the stomach of dogs, in which sulfanilamide was applied. Key and Frankel,[3] however, observed, from experiments on dogs, that the "sulfamido" drugs at first slightly retard the rate of healing, but that, on the whole, the course is not unduly prolonged. They found that considerable amounts of bloody fluid sometimes collect in the wound, but this is usually absorbed without drainage— this they attribute to interference with clot formation. Key, together with Buford,[4] has also carried out some brilliant experiments on the effect of sulfanilamide on bone healing. Following aseptic fracture of one bone of both forelegs of rabbits and packing of one fracture site with sulfanilamide, the other being left as a control, they detected little, if any difference in the rate of union. This finding would indicate that sulfanilamide does not inhibit callus formation in fractures.

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In the author's early experience with the local use of sulfanilamide, solutions were prepared by crushing and dissolving the required number of tablets in distilled water, and autoclaving the solution, or, for small wounds, the tablets were simply crushed and distributed as desired. For some time, however, sulfanilamide has been available in powder and crystal form, either in bulk or in measured ampules. Most workers do not hesitate to apply the powder without further sterilization; this is certainly not necessary if sterile ampules are used. When desired, sterilization may be accomplished by autoclaving the powder or crystals or heating in an oven at 120 degrees centigrade. The latter method is preferable, in that autoclaving usually allows sufficient moisture to penetrate the powder to convert it into an unwieldy mass. The dosage should be governed by the type and extent of the wound; when advisable, twenty to thirty grams may be used with impunity.

Sufficient evidence has accumulated within recent years to establish beyond question the efficacy of sulfanilamide in open wounds. The scope of its application has been constantly widened so that today it is employed in a large variety of cases. To illustrate some of its uses, the following examples have been taken from the literature and from personal experience.

Brown[5] of England, in 1937, reported the successful treatment of two cases of streptococcic empyema by intrapleural injections of prontosil solution. Childrey[6] obtained good results in purulent maxillary sinusitis from local irrigations and instillations. Thompson, Brabson, and Walker[7] report the surgical treatment of 204 consecutive cases of acute appendicitis observed during the year 1940 with no mortality, as compared to a mortality of 2.7 per cent in a total of 741 cases treated during the previous five-year period; sulfanilamide was used locally in twenty-nine per cent of the 1940 group of cases. Tendler[8] reports a mortality of 2.3 per cent in a group of cases of ruptured appendix, in the majority of which sulfanilamide crystals were placed inside the peritoneal cavity and in the incision. In a similar group previously encountered, wherein sulfanilamide was not employed, the mortality was 11.6 per cent. Herrell and Brown[9] of the Mayo Clinic successfully applied the drug or one of its derivatives locally to infections of the scalp, staphylococcus aureus infection of a nephrectomy wound, mixed pleural infection following pneumonectomy, and ulcerating vaginal lesions. Mayo and Miller[10] report favorable results from a saturated solution of sulfanilamide as a wound irrigant following posterior resection, or combined abdomino-perineal resection for carcinoma of the rectum. They advocate flushing the wound with hydrogen peroxide before application of the sulfanilamide solution. Jensen, Johnsrud, and Nelson[11] report thirty-nine compound fractures and two compound dislocations treated with sulfanilamide, all of which healed without infection.

In the present war the local use of sulfanilamide in wounds is practically a routine procedure. Buttle[12] states that the sulfanilamides are more effective locally as prophylactic than as curative agents, and suggests that each British soldier carry five grams of sulfanilamide powder for first-aid application to fresh wounds. At the meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine,[13] good results were reported from the local administration of sulfanilamide in the treatment of war wounds and burns, and its use was encouraged. The incidence of infection in compound fractures prior to the introduction of sulfanilamide was approximately twenty-five per cent; since that time infections have been reduced to approximately nine per cent. One of the most striking examples of the value of the drug for local application was that reported by King[14] of the British Medical Corps. In the treatment of wounds incurred in fighting prior to the evacuation of Dunkirk, he employed both flavine and sulfanilamide packs, using the former in the simpler cases, and reserving sulfanilamide, because of its scarcity, for the more serious wounds. Thorough debridement and absolute hemostasis were carried out in both groups. The patients who were treated with sulfanilamide, even though their wounds were the more severe, were less toxic and had fewer complications, and all were living at the time of their transfer to a base hospital. In contrast, there were several deaths in the group treated with flavine packs.

The author has applied sulfanilamide in several different types of wounds with gratifying success. Brief descriptions of a few of these may be of interest.

Case 1 (streptococcic peritonitis). A colored female, aged twenty years, was admitted to the hospital with a clinical picture of a ruptured appendix with peritonitis. At operation the appendix was found to be normal, though a spreading pelvic peritonitis was evident. The right Fallopian tube was acutely inflamed and apparently was the site of the original infection. A rubber catheter was placed in the cul-de-sac and the wound loosely closed. A pint of saturated solution of sulfanilamide was then introduced through the catheter, which was left open for drainage, and the usual supportive treatment for peritonitis was instituted. Twelve hours later another pint of the solution was introduced and the catheter was withdrawn. Culture yielded streptococcus fecalis, and on further questioning the patient admitted a criminal abortion. Recovery ensued after a stormy postoperative course.

Case 2 (third-degree burn). A white male, aged twenty-eight years, was brought to the office with large third-degree burns of the medial and lateral areas of the right foot, produced by molten metal which had spilled into his shoe. He was advised to enter the hospital, but refused to do so. All the devitalized skin, including the surrounding blebs, was removed, and the wounds were bathed with aqueous mercurophen solution. They were then dusted freely with sulfanilamide, and a sterile gauze dressing applied. The cleansing and dressing with the powder was repeated every two days. Contrary to expectations, there was no inflammation, nor did the foot become painful. Healthy granulation promptly appeared at the margins of the wounds, the slough separated, leaving clean granulation tissue, and suppuration, though present, was of a minimum amount. Epithelization was complete within a relatively short time.

Case 3 (resection of gangrenous intestine). A white female, aged twenty-six years, was operated on for intestinal obstruction twelve hours after onset of the symptoms. A volvulus of an upper segment of the jejunum was found with gangrene of approximately two feet of the intestine, and a large amount of dark, sanguinous peritoneal fluid was present. The diseased area of the intestine was resected, a lateral anastomosis made, and the wound closed without drainage after implantation of approximately fifteen grams of powdered sulfanilamide throughout the peritoneal cavity. Recovery was uneventful and the wound healed without infection.

Case 4 (empyema). A white male, aged thirty years, was admitted to the hospital with the following history: Six months prior to admission he had a ruptured appendix with peritonitis; this was followed by a fecal fistula, which drained for several months before closing spontaneously. He had never recovered entirely, and was unable to be out of bed except for short periods of time. Recently he had grown worse, and three weeks prior to admission had developed a cough productive of copious quantities of watery, slightly purulent sputum. The physical and roentgenographic examination showed right pleural effusion to the level of the third intercostal space. Thoracentesis yielded 400 cubic centimeters of thick, foul, yellowish-green exudate. Five days later a classical rib resection was carried out under local anesthesia. Approximately ten grams of sulfanilamide powder was placed in the pleural cavity, a large mushroom catheter introduced, and the wound closed in the usual manner. Irrigations with saturated sulfanilamide solution were carried out several times daily. The catheter became loose on the sixth day and was removed; thereafter, irrigations were continued through a small catheter inserted into the sinus at each treatment. The postoperative course was most gratifying, signs of toxicity soon disappearing. The patient gained weight rapidly, developed a ravenous appetite, and was discharged from the hospital twenty-four days after operation. Roentgenograms made just before his dismissal revealed re-expansion of the lung with only slight blunting of the costophrenic angle with fluid.

Case 5 (thyroglossal cyst). A colored boy, aged eleven years, was operated on for thyroglossal cyst. During the dissection, the sac was ruptured and a portion of its contents spilled. Five grams of sulfanilamide crystals were placed into the depths of the wound. Healing took place promptly without serum formation or infection. Although the contents of the sac were probably sterile, it was believed advisable to take every precaution against infection in the neck, which is always particularly troublesome.

Case 6 (chronic leg ulcer). A white male, aged fifty-two years, came for examination because of a large ulcer over the left lower leg of three months' duration. He stated that he had previously had an ulcer in the same locality, which required nine months to heal. Examination revealed a chronic ulcer over the lower shin, one inch in diameter, surrounded by a brawny zone of inflammation. There were moderate varicosities of the left leg and thigh. The ulcer was treated with sulfanilamide and adhesive compression strappings, applied every two days. Healing was complete within two weeks.

Case 7 (compound comminuted fracture). A young white woman had received a compound comminuted fracture of the distal right humerus. The skin and subcutaneous tissues on the anterior aspect were torn for a distance of two-thirds the circumference of the arm, and the bellies of the biceps and brachialis muscles were completely severed. The distal shaft of the humerus was shattered, the projecting fragments being covered with dirt. Fortunately, the brachial artery and main nerve trunks were intact. The wound was thoroughly cleansed with green soap and water and Dakin's solution and debrided. The two main fragments of bone were drilled and wired end to end; several of the smaller fragments were completely detached and necessarily lost in debridement. Sulfanilamide powder was then rubbed into all raw space, the severed muscles and fascia approximated with interrupted chromic catgut, and the skin closed with dermal without drainage. A plaster cast was applied to the extremity for immobilization. Good union was obtained, and with the exception of a partial radial paralysis, which may disappear, the patient has practically normal function.

Case 8 (multiple compound comminuted fracture-dislocations). A Negro male, forty years of age, had been severely crushed by an earthslide while doing excavating work, and when first seen was in extreme shock. The shafts of both femurs were fractured, the right foot was completely dislocated posteriorly on the tibia, the distal articular surface of the tibia had been ground into the dirt, and there was a fracture of the distal tip of the fibula. In addition, he had a compound comminuted fracture of the distal portion of the right radius, with an associated dislocation of the distal end of the ulna. After the patient had been treated for the initial shock, the wounds were thoroughly cleansed with green soap and water and Dakin's solution and covered with sulfanilamide powder. The fibular fragments were wired, the ligaments of the ankle joint sutured, the skin closed without drainage, and a boot cast applied to the leg and foot. The right forearm was likewise cleansed, the ulnar dislocation reduced, and the ligaments of the wrist sutured. Sulfanilamide was then freely introduced into the wound and it was closed without drainage, and the extremity was immobilized in a cast. Skeletal traction was subsequently applied to both femurs. Under routine postoperative care the wounds healed without infection. The patient now has partial motion in the ankle joint. Because of the extensive damage to the ligaments, the functional result in the wrist is poor.

Summary and Conclusions

1. The status and rationale of the local use of sulfanilamide in various phases of surgery have been discussed.

2. A few illustrative cases have been presented.

3. The local use of sulfanilamide in preventing and combatting infection merits further trial.

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OBSCURE FEVERS*

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By the term obscure fever it is implied that the cause is indistinct or not well understood. For me that is too often the case; and it may be a source of concern to some others. The subject is so wide and detailed that it would be impossible to thoroughly cover it in a paper of this nature, and will be discussed mainly with the intention of recalling to mind some of the more likely causes of obscure fever.

There has been considerable change in our attitude toward fever in the last century. Where formerly fever was considered as are specific diseases today, and treatment prescribed for its various types, we now look upon it as a manifestation of the reaction of the body to disease.

The temperature of the body normally is considered to be about 98.6 degrees Fahrenheit by mouth (thirty-seven degrees centigrade) and roughly a degree higher by rectum and a degree lower by axilla. Some individuals normally vary a few tenths of a degree above or below this figure; and likewise there may be variations of one degree to 1.5 degrees in the same individual between late afternoon and early morning hours. Birds and mammals are endowed with a very efficient heat-regulating mechanism, which will maintain a constant body temperature under marked environmental changes. The heat-controlling centers are located in or near the hypothalmus. Injury to this area will interfere with the ability of experimental animals to adjust their body temperature when exposed to cold, and so we assume it affects us similarly.

Heat is produced by chemical reaction and lost by physical factors. To maintain an even temperature there must be a balance between the two. The most common avenues of heat loss are through (1) radiation, convection, and conduction, (2) evaporation of water from the skin and lungs, and these two account for ninety per cent of the heat loss from the body.

Fever then must be caused by a disturbance of the heat-regulatory center, or interference with those factors producing heat loss.

Blumer states that there are listed seventy-five febrile diseases of specific etiology, and this list does not incorporate the non-infectious causes. When fever is the only presenting symptom, we can often rule out very quickly many causes which are associated with other manifestations such as the acute exanthemata, tonsillitis, or perhaps a wound infection.

Miller very aptly suggests that in the diagnosis of a febrile case which presents few or no physical signs two things should be borne in mind: (1) that it may be an atypical case of a common disease or (2) it may be a relatively common disease, but which is seen infrequently in that particular locality.

Diagnosis should always have a very carefully-taken history as the initial steps in the process. The differential diagnosis is aided by grouping the causes of fever so that no cause may be omitted. Miller quotes Keefer's classification of fevers which follows and apparently approves it: (1) specific infections, (2) tumors, (3) disorders of the blood-forming organs, (4) disorders of the heat-regulatory mechanism, (5) fever produced by drugs, (6) surgical fevers, probably toxic and due to extensive aseptic surgical procedures, and (7) miscellaneous fevers where the cause is obscure, but probably lies in one of the above specific classifications.

The group of obscure fevers in specific infections embraces all the acute and chronic infections, and is certainly the most common group. To consider all would require too much time, and an attempt will be made only to consider a few of those conditions which may fail to give typical signs and symptoms.

One of the most common causes of a low-grade continued fever is postnasal infection. The temperature most usually ranges from ninety-nine to 100.5, the white blood count is usually normal or low, and the general examination is essentially negative. Culture from the postnasal area may furnish the only proof necessary to direct treatment. Recurrences are common and response to treatment is usually prompt.

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Probably one of the most frequently overlooked foci is prostatic infection. With this the fever usually ranges from one to two degrees elevation. The general physical examination is usually essentially negative. The white blood count may be normal or moderately elevated. Even prostatic massage may be negative a time or two and then pus be expressed.

Tuberculosis should probably be the first condition thought of in a low-grade continued fever and must be ruled out. Physical signs may be absent, sputum negative, and X-ray may or may not be diagnostic. The bacilli may be found in the stool, or gastric lavage may yield the evidence.

Undulant fever is always to be considered in the patient with fever and without characteristic signs. The infection may be through abraded skin by contact, by means of flies, and even though pasteurized milk be used, undulant fever must be considered. The agglutination test is not always positive, the intradermal test may be. Blood and urine cultures may reveal the organism, or it may be recovered from the stool. Treatment is by vaccine or chemotherapy and general supportive measures.

Typhoid fever, which once was so common, particularly in our Southland, has become fairly rare in most localities, and for this reason is apt to be overlooked. The laboratory may be the only means of diagnosis in many of the mild cases. Early the blood culture should prove it—in the second week the Widal.

Tularemia is a widespread and fairly common disease, and usually has a sudden onset with chills, relatively high fever, and a variable amount of prostration. This type offers little of the difficulty in diagnosis that the mild ambulatory case does, and this latter type is not rare. Usually there is present an ulcer and lymph gland enlargement, but the organism may enter through the unbroken skin and no ulcer be present. Agglutination test should be run for this condition whenever any obscure fever is present. It becomes positive in the second week.

Relapsing fever due to a type of spirochete called Borrelia is transmitted by ticks (tick feces into skin abrasions). The onset is sudden with generalized pains and aches, and the fever may be above 103 degrees. The fever subsides after a few days and reappears after a couple of weeks. The liver and spleen enlarge during the febrile period, and the organism may be found in the blood smear. Arsphenamine is curative.

Typhus and Rocky Mountain spotted fevers — practically indistinguishable from each other—the first transmitted by the louse and the latter by the tick, and neither has a specific treatment. Both have first a macular, later a petechial, eruption which may coalesce into large blotches. Onset is usually with a chill and high fever, prostration, severe muscle pains, often delirium and muscular twitching. Within a few days the rash appears. The agglutination becomes positive (Felix-Weil reaction) about the end of the first week.

Rheumatic fever is a condition with generalized fleeting pains, general malaise, anorexia, and fever over a period of weeks. It should particularly be suspected in children and young adults. The prodromal period is prolonged and the polyarthritis need not exist in youth. The presence of arthritis, chorea, rheumatic nodules, or valvular heart disease renders the diagnosis easier. The increased sedimentation time and prolonged P R interval in the electrocardiogram should aid in a correct diagnosis.

Treatment should be supportive and bed rest until fever is gone and sedimentation rate returns to normal. The pulse rate is usually normal by this time.

Subacute bacterial endocarditis is suspected where fever of low grade persists following an acute infection, often an acute upper respiratory. There is present malaise and low-grade fever. Signs are valvular disease, enlarged spleen, petechiae, and blood culture should show streptococcus viridans. One negative culture means nothing—several should be made if necessary. The result is usually always fatal.

Infectious mononucleosis glandular fever usually has a sudden onset, most often with a sore throat, soon there is lymph gland enlargement, usually general, at times local. The course is self-limited, the heterophile antibody test is diagnostic (if serum sickness be excluded). The blood picture may show a mononucleosis as high as ninety-nine per cent and at times may cause it to be confused with leukemia. However, here the heterophile test will rule out any uncertainty.

Intestinal parasites, especially the roundworm, in children are to be considered in any obscure fever. Careful examination of the stool should rule in or out this condition.

Trichinosis has fever also. History of eating poorly-cooked or raw pork is important in the diagnosis. Gastrointestinal distress and muscle soreness may be severe. The blood shows an eosinophilia; Trichinella larvae may be found in the stool or centrifuged blood. Muscle biopsy will be conclusive after the encystment stage is reached. The Bachman intradermal test is simple and fairly positive for diagnosis (one-tenth cubic centimeter of 1—5000 dilution of specific antigen into skin of forearm white center with erythema five centimeters in diameter immediately and reaches maximum in ten minutes).

Hodgkin's disease is usually insidious in onset with fever which is continuous or alternating, glandular enlargement, weakness, loss of weight, pallor, and pressure symptoms (if gland enlargement is so situated). Severe pruritis may be early and continuous. Biopsy of an enlarged lymph gland demonstrating the Dorothy Reed cell is conclusive.

Malignant tumors, carcinoma of the stomach or bowel with ulceration, and the ensuing infection or bronchogenic carcinoma may produce a low-grade fever. Symptoms will usually lead to investigation of the proper system.

Disorders of the heat-regulating mechanism may result in increased temperature. Continual exposure to excessive heat results in fever, headache, muscle cramps, nausea, and vomiting. Salt and water balance must be obtained in these cases and removal from the excessive heat environment.

Since the advent of the sulfonamide group of drugs and their widespread use and the use of large amounts of antisera, in those cases where either has been used, they must receive consideration as a cause of a continued fever.

I hope I may have emphasized a few of the more common causes of obscure fever. I know I have given you nothing new.

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DISCUSSION

DR. ROBERT P. McCOMBS (Instructor, Postgraduate Instruction in Internal Medicine): Doctor Thomas has admirably summarized a very difficult subject. I would like to point out certain things along a general line which have to do with this condition.

I would like to point out an extremely important thing, namely, that we should not let the laboratory be the only thing to make a diagnosis for us. Too often great reliance is placed in laboratory tests, the interpretation of which may be extremely difficult. For example, an agglutination test with a low titer, or a blood culture which shows questionable organisms, or blood smears with questionable findings, which in themselves are often due to improper staining, may lead to an improper diagnosis and cause us to miss the cause of an obscure fever and to give improper treatment.

I would stress the importance, as Doctor Thomas has, of taking a very careful history and physical examination. In most cases, to the more than casual observer, the cause of the fever can be detected. For example, in rheumatic fever the history should help us to decide whether the patient has this infection, particularly if we inquire as to unexplained nosebleeds, abdominal pain, vomiting, vague muscle pains, chest pains, palpitation, or previous attacks, and, of course, the finding of cardiac changes which may progress or recede will help confirm this diagnosis.

About fifteen or twenty per cent of patients with rheumatic heart disease will die from bacterial endocarditis, and therefore this diagnosis should be considered in any patient who has a heart murmur and a fever, and blood cultures must be taken frequently, repeated many, many times, and kept over a period of two or three weeks because most cases have received sulfonamides, and this depresses the growth of these organisms and they may not show up for a rather prolonged period.

Foci of infection Doctor Thomas has pointed out. Many cases will run obscure fever from nothing more than an abscessed tooth, and, as he pointed out, pharyngitis or prostatitis. I would emphasize also gall-bladder disease and deep colon dysfunction.

Any glandular enlargement should be viewed with suspicion, and this is a very definite physical finding. We must search the epitrochlears, the axillaries, and so forth, and in any patient with fever otherwise unexplained, biopsy will frequently give us the answer.

Blood counts carefully made are often essential to rule in or out such things as malaria, leukemia, infectious mononucleosis, and the eosinophilia of parasitic infestation, various allergies, or rarely such things as periarteritis nodosa.

Leukopenia may cause us to suspect malaria, typhoid, virus infection, Banti's disease, lupus erythematosus, agranulocytosis, all of which may give an obscure fever.

Anemia by itself seems capable of upsetting the heat-regulatory mechanism enough to give rise to a continuous fever.

One final word. If you were to ask me what is the commonest cause of so-called obscure fever in Tennessee, I would say without any hesitation, sulfonamide fever, because I have seen so many cases and have heard of so many more in which continuous sulfonamides are being used to treat a fever. This is not right. The cause of the fever frequently lies in the drug itself. Therefore, we should adopt a policy of never treating a patient for more than seventy-two hours with sulfonamides unless bacteriologic proof of its necessity is present.

DR. C. H. SANFORD (Memphis): Doctor Thomas is certainly to be congratulated for summing up so thoroughly the ordinary causes of fever, and I certainly want to emphasize what Doctor McCombs said about the sulfonamide group being responsible for a very large number of unexplained fevers.

After going over all these causes of fever which have been mentioned, there still remains a group of cases which, whether we like it or not, we have to classify as fevers of unknown origin. We all see them.

A report came from the Mayo Clinic a number of years ago reporting a number of cases of fever of unknown origin. All of these things which have been mentioned today were ruled out in those cases. These cases, incidentally, that were reported were followed over a considerable number of years. In most of them the cause was never determined. If I remember correctly, the average length of time of that particular group in which elevations of temperature existed was nearly five years, fifty-six months, to be exact. They drew the conclusion that, first of all, the mortality rate was no higher in that group of individuals than in a similar group of unselected individuals, and they drew the conclusion also that tuberculosis was no more common in that group than in an equal number of individuals selected at random.

We all see those cases. In my own personal experience there have been apparently certain characteristics of fevers of unknown origin. First of all, they occur more often, I think, in women than in men; they occur more often in young women; they occur more often in women who are of a neurotic temperament.

Another characteristic of this type of fever is that it practically never goes above 100. Another characteristic is that it is very irregular in its appearance. It may be present this morning, it may be present tomorrow afternoon; in other words, it does not have that regular pattern that fever in tuberculosis has. Another characteristic of it is that it is not materially influenced by rest and exercise.

Many of these cases have been erroneously diagnosed as tuberculosis, and many of them have been sent to sanatoria for treatment of a disease which does not exist.

I think that when we have a patient with an obscure fever, we should study them very, very thoroughly, rule out all possible known causes of elevations of temperature, and then if we have ruled out those things and we find nothing to account for the fever, tell the patient to throw her thermometer away and forget it.

DR. W. H. WITT (Nashville): I just want to call your attention to one or two things mentioned by Doctor Sanford. Osler, years ago, called our attention to the fact that a good many people had a low grade of temperature, rising as high as 100, over a long period with practically no impairment of the general health. That does not mean that all such cases ought not to be thoroughly studied, but it does mean that they might be overstudied and might be overworried by their doctor at there being some obscure trouble back of it all, especially tuberculosis.

There are two conditions that may be associated with some degree of continued fever that I do not think were mentioned. One is hyperthyroidism and the other is primary anemia. Doctor McCombs called attention to the fact that anemia alone might produce some fever, which is very true, but primary anemia, so-called pernicious anemia, is essentially a febrile disease, and any obscure fever, particularly of an elderly person, and doubly particularly if there are neurological symptoms, should bring up at once a question of primary anemia. A low white count and some other things would tend to clear the diagnosis.

I also wish to call attention to hyperthyroidism as a cause of rather long-drawn-out, low-grade fever. Both these conditions happen to have physical features that suggest the diagnosis as soon as the patient walks into the office. I shall not dwell on these.

DR. R. B. WOOD (Knoxville): There is one subject which was mentioned by the essayist which I would like to emphasize, and that is the question of infectious mononucleosis or glandular fever. If we follow the ordinary textbook description of mononucleosis, I am quite sure that we are going to overlook a great number of cases. We have seen a vast number in our locality, sometimes almost reaching epidemic form. For instance, in one of the training schools a number of cases were picked up in which the usual symptoms of mononucleosis were entirely absent. If we are to place reliance in the heterophile antibody reaction, it would seem to me that the textbook description of mononucleosis should be entirely rewritten. I say that in view of the fact that we have seen a number of cases with strongly positive heterophile antibody reaction in which there were no glandular enlargements whatsoever. The usual history of onset is sore throat, malaise, aching, particularly in the neck and back muscles, not relieved by the ordinary measures, and which persist over a long period of time. Temperature does not always go along with this, however, but the symptoms persist.

Another misleading thing is that if these individuals are subjected to a Wassermann test, many of them give both a positive Wassermann and Kline test, which may lead to an erroneous diagnosis of syphilis, and if perchance you do have added to that syphilis, it further complicates the problem, as we saw in a young lady recently who had a psoriasiform rash of syphilis with a very strongly heterophile antibody reaction.

I have been extremely anxious to hear someone speak something more in regard to the reliability and the specificity of the heterophile antibody reaction.

THE MEDICAL PROFESSION IN MILITARY SERVICE

The editor of the JOURNAL wishes to publish each month a complete list of the members of the Tennessee State Medical Association who are serving with the armed forces. The following is a list of the doctors under four categories: first, those who are in service now; second, those who are commissioned and are awaiting orders; third, those who have applied for commissions and passed their physical examinations; fourth, those who have applied for a commission and been rejected on physical grounds.

The list is incomplete, we know, because this office may not get accurate information until some days after a commission has been issued. The cooperation of all secretaries is requested to the end that the list be kept complete.

THE HONOR ROLL OF THE MEDICAL PROFESSION IN TENNESSEE NOW SERVING IN THE ARMED FORCES

County	*Name*	*Address*
Anderson	Horton DuBard	Knoxville
Bedford	H. J. Shull	Shelbyville
Blount	R. H. Haralson	Maryville
Blount	Lowell E. Vinsant	Maryville
Bradley	A. L. Ball	Cleveland
Campbell	O. H. Coleman	Lafollette
Campbell	Jos. McCoin	Lafollette
Carter	H. B. Damron	Elizabethton
Carter	J. B. Warren	Elizabethton
Coffee	G. W. Shelton	Manchester
Davidson	Jos. D. Anderson	Nashville
Davidson	H. M. Carney	Nashville
Davidson	Robt. N. Buchanan	Nashville
Davidson	Richard R. Crutcher	Nashville
Davidson	Marion I. Davis	Nashville
Davidson	J. J. Eberhart	Nashville
Davidson	P. C. Elliott	Nashville
Davidson	Frank F. Ellis	Nashville
Davidson	Joe W. Fenn	Nashville
Davidson	Garth E. Fort	Nashville
Davidson	S. F. Fowler	Nashville
Davidson	John W. Frazier, Jr.	Nashville
Davidson	Hamilton V. Gayden	Nashville
Davidson	H. L. Gilliand	Nashville
Davidson	Thos. Grizzard	Nashville
Davidson	Geo. B. Hubbard	Nashville
Davidson	Geo. S. Johnson	Nashville
Davidson	Harry D. Jones	Nashville
Davidson	J. K. Kaufman	Nashville
Davidson	W. J. Lee, Jr.	Nashville
Davidson	R. Carl Light	Nashville
Davidson	Jas. A. Loveless	Nashville
Davidson	Jas. R. McMillan	Nashville
Davidson	Robt. H. Magruder	Nashville
Davidson	Jas. G. Mead	Nashville
Davidson	Cleo M. Miller	Nashville
Davidson	Hugh J. Morgan	Nashville
Davidson	Paul G. Morrissey, Jr.	Nashville
Davidson	John R. Olson	Nashville
Davidson	Fred W. T. Overton	Nashville
Davidson	Robt. C. Patterson, Jr.	Nashville
Davidson	E. L. Rippy	Nashville
Davidson	A. F. Russell	Nashville
Davidson	Jos. H. Sayers, Jr.	Nashville
Davidson	Ewing Seligman	Nashville
Davidson	Henry Carroll Smith	Nashville
Davidson	Wm. A. Sullivan	Nashville
Davidson	A. J. Sutherland, Jr.	Nashville
Davidson	W. A. VanNortwick	Nashville
Davidson	Thos. S. Weaver	Nashville
Davidson	B. M. Weinstein	Nashville
Davidson	Claiborne Williams	Nashville
Davidson	Herbert Wilson, Jr.	Nashville
Davidson	W. C. Winton	Nashville
Davidson	Thos. E. Wyatt	Nashville
Davidson	Chas. R. Yancey	Nashville
Dickson	W. M. Jackson	Dickson
Dyer	C. L. Denton	Dyersburg
Franklin	Geo. L. Smith	Decherd
Gibson	B. T. Bennett, Jr.	Trenton
Gibson	Roscoe Faulkner	Trenton
Hamblen	D. R. Roach	Morristown
Hamblen	D. Z. Zimmermann	Morristown
Hamilton	E. F. Buchner, Jr.	Chattanooga
Hamilton	Douglas Chamberlain	Chattanooga
Hamilton	John W. Claiborne, Jr.	Chattanooga
Hamilton	J. R. Fancher	Chattanooga
Hamilton	J. L. Hamilton	Chattanooga
Hamilton	F. F. Harris	Chattanooga
Hamilton	H. T. Holden	Chattanooga
Hamilton	Howard H. Karr	Chattanooga
Hamilton	J. J. Killeffer	Chattanooga
Hamilton	P. H. Livingston	Chattanooga
Hamilton	Augustus McCravey	Chattanooga
Hamilton	Paul H. Milton	Chattanooga
Hamilton	E. T. Newell, Jr.	Chattanooga
Hamilton	Robt. C. Robertson	Chattanooga
Hamilton	M. J. Smith, Jr.	Chattanooga
Hamilton	Wm. A. Stem	Chattanooga
Hamilton	W. Dean Steward	Chattanooga
Hamilton	J. C. Wright	Chattanooga
Hardeman	D. L. Brint	Bolivar
Hardin	C. Whitman Borg	Savannah
Hardin	S. L. Stephenson, Jr.	Savannah
Hawkins	Landrum Tucker	Rogersville
Hawkins	A. S. Yates	Rogersville
Henry	J. W. Didcoct	Paris
Henry	J. C. McKissick	Paris
Knox	E. E. Carrier	Knoxville
Knox	W. A. DeSautelle	Knoxville
Knox	Geo. G. Henson	Knoxville
Knox	C. R. Huffman	Knoxville
Knox	C. E. Irwin	Knoxville
Knox	H. H. Jenkins	Knoxville
Knox	J. O. Kennedy	Knoxville
Knox	J. H. Lesher	Knoxville

Knox—J. D. McCullough	Knoxville
Knox—Wm. T. McPeake	Knoxville
Knox—J. L. Montgomery	Knoxville
Knox—Ralph Nichols	Knoxville
Knox—Herschel Penn	Knoxville
Knox—J. S. Ruffin, Jr.	Knoxville
Knox—P. D. Smith	Knoxville
Knox—Geo. W. Tharp	Knoxville
Knox—Leon J. Willien	Knoxville
Knox—Malcolm F. Cobb	Knoxville
Lake—W. T. Rainey	Tiptonville
Lauderdale—J. H. Nunn	Ripley
Lawrence—L. C. Harris, Jr.	Lawrenceburg
Loudon—F. E. Hufstedler	Lenoir City
McMinn—E. R. Donathan	Etowah
McMinn—S. B. McClary, Jr.	Etowah
McNairy—H. O. Mason	Adamsville
Madison—L. D. Farragut	Bemis
Madison—H. H. Herron	Bemis
Madison—C. H. Brown	Jackson
Madison—R. S. Hellmann	Jackson
Madison—Carl Rogers	Jackson
Madison—A. R. Taylor	Jackson
Madison—J. R. Thompson, Jr.	Jackson
Madison—P. E. Wylie	Jackson
Madison—Stevens Byars	Mercer
Marshall—A. L. Cooper	Chapel Hill
Marshall—H. B. Disharoon	Lewisburg
Maury—W. N. Cook	Columbia
Maury—Robin Lyles	Columbia
Maury—J. B. Miller	Columbia
Monroe—D. F. Heuer, Jr.	Sweetwater
Monroe—R. M. Price	Sweetwater
Montgomery—J. A. Culbertson	Clarksville
Obion—R. M. Darnall	Union City
Putnam—H. H. Taylor	Cookeville
Putnam—R. L. Akin	Monterey
Roane—G. D. Schuessler	Oliver Springs
Roane—F. Davis Owings	Rockwood
Rutherford—Harvey W. Carter	Murfreesboro
Shelby—Philip B. Bleecker	Memphis
Shelby—J. Hughes Chandler	Memphis
Shelby—J. M. Chambers, Jr.	Memphis
Shelby—R. B. Chrisman, Jr.	Memphis
Shelby—Phillip T. Crawford	Memphis
Shelby—Chas. J. Deere	Memphis
Shelby—J. D. Evans	Memphis
Shelby—Taylor Farrar	Memphis
Shelby—Benj. Fendler	Memphis
Shelby—L. F. Ferrell	Memphis
Shelby—B. F. Floyd, Jr.	Memphis
Shelby—Jos. A. Gardner, Jr.	Memphis
Shelby—Geo. E. Gish	Memphis
Shelby—Carl M. Harwell, Jr.	Memphis
Shelby—R. D. Henderson	Memphis
Shelby—R. A. Hennessey	Memphis
Shelby—B. S. Henry	Memphis
Shelby—C. H. Householder	Memphis
Shelby—James G. Hughes	Memphis
Shelby—John L. Houston	Memphis
Shelby—John D. Hughes	Memphis
Shelby—Chas. W. Ingle	Memphis
Shelby—Albert M. Jones	Memphis
Shelby—W. B. Key	Memphis
Shelby—John C. King	Memphis
Shelby—Chas. M. Lobrano	Memphis
Shelby—I. E. Lobrano, Jr.	Memphis
Shelby—J. P. Long, Jr.	Memphis
Shelby—Wm. Battle Malone, II	Memphis
Shelby—P. M. Markle	Memphis
Shelby—R. A. Miller	Memphis
Shelby—J. P. Moss	Memphis
Shelby—Geo. E. Paullus, Jr.	Memphis
Shelby—V. D. Pettit	Memphis
Shelby—Hugh R. Raines	Memphis
Shelby—L. C. Ramsay	Memphis
Shelby—Chas. G. Robinson	Memphis
Shelby—P. B. Russell, Jr.	Memphis
Shelby—E. C. Segerson	Memphis
Shelby—M. J. Tendler	Memphis
Shelby—W. M. Tipton	Memphis
Shelby—A. B. Tripp	Memphis
Shelby—C. F. Varner	Memphis
Shelby—T. L. Waring	Memphis
Shelby—O. S. Warr, Jr.	Memphis
Shelby—J. E. Watson, Jr.	Memphis
Shelby—J. E. Wilson	Memphis
Sullivan—H. O. Bolling	Kingsport
Sullivan—K. R. Kiesau	Kingsport
Tipton—O. J. Swisher	Covington
Unicoi—R. H. Harvey	Erwin
Unicoi—W. C. Humbert	Erwin
Washington—C. S. Gresham	Johnson City
Washington—W. L. Poole	Johnson City
Washington—W. G. Preas	Johnson City
Washington—H. B. Cupp	Mountain Home
Wilson—O. R. Hill	Lebanon
Wilson—James McFarland, Jr.	Lebanon
Wilson—W. K. Tilley	Lebanon

DOCTORS WHO HAVE RECEIVED COMMISSIONS AND AWAITING ORDERS TO ACTIVE DUTY

County	*Name*	*Address*
Bradley	Dwight N. Arnold	Cleveland
Bradley	Claud H. Taylor	Cleveland
Bradley	Madison S. Trewhitt	Cleveland
Davidson	James P. Anderson	Doctors Bldg., Nashville
Davidson	Ray O. Fessey	2413 West End, Nashville
Davidson	Irving R. Hillard	Woodland Street, Nashville
Davidson	Jackson P. Lowe	St. Thomas Hospital, Nashville
Davidson	Max K. Moulder	Doctors Bldg., Nashville
Davidson	Newton A. Cannon	Nashville General Hospital, Nashville
Davidson	James H. Mathews	St. Thomas Hospital, Nashville
Davidson	Jos. C. Wood	St. Thomas Hospital, Nashville
Davidson	David F. Johnson	Madison College
Davidson	A. S. Koening	Old Hickory
Hamilton	Julian C. Brooks, Jr.	Crest Road, Chattanooga

Hamilton—Harley C. Darnall--------Chattanooga
Hamilton—Richard V. Fletcher
Medical Arts Bldg., Chattanooga
Hamilton—James M. Higginbotham
Newell Sanitarium, Chattanooga
Hamilton—Richard H. Mellen
Medical Arts Bldg., Chattanooga
Hamilton—Fay B. Murphy
Chamberlain Avenue, Chattanooga
Hamilton—Paul R. Swanson---------Chattanooga
Knox—B. M. Overholt
Medical Arts Bldg., Knoxville
Loudon—James A. Leeper------------Lenoir City
Polk—John H. Lillard--------------------Benton
Shelby—R. E. Bland (Col.)--Orgill Ave., Memphis
Shelby—J. M. Chandler----899 Madison, Memphis
Shelby—M. L. Evans-2151 Young Street, Memphis
Shelby—R. E. Lawson-----899 Madison, Memphis
Shelby—Alfred H. Page---899 Madison, Memphis
Shelby—O. S. McCown, Jr.--899 Madison, Memphis
Shelby—Julian K. Welch, Jr.
Jackson Avenue, Memphis
Smith—Charles E. Pack----------------Carthage
Sumner—Benjamin H. Warren-----------Gallatin
Sumner—Perry M. Huggin--------------Gallatin

DOCTORS WHO ARE PHYSICALLY QUALIFIED AND WHOSE COMMISSIONS ARE PENDING

County *Name* *Address*

Bradley—Wm. A. Garrott--------------Cleveland
Cocke—Glen C. Shults--------------------Cosby
Davidson—Paul E. Purks-Doctors Bldg., Nashville
Hamilton—Samuel D. Sullenberger--Chattanooga
Hamilton—O. L. Von Canon
Medical Arts Bldg., Chattanooga
Hamilton—Eugene F. McCall
Erlanger Hospital, Chattanooga
Hamilton—Tim J. Manson
Medical Arts Bldg., Chattanooga
Knox—Wiley R. Smith---R. F. D. No. 2, Knoxville
Knox—Sam P. Davidson
Knoxville General Hospital, Knoxville
Knox—James W. Riggs
Knoxville General Hospital, Knoxville
Knox—John A. Range
Knoxville General Hospital, Knoxville
Knox—John M. Stockman
207 Forrest Hill Blvd., Knoxville
Knox—Joseph H. Duggins
Knoxville General Hospital, Knoxville
Knox—Willard J. Irwin
Medical Arts Bldg., Knoxville
Knox—Richard N. Duffey
Knoxville General Hospital, Knoxville
Knox—Alvin J. Weber-----------------Bearden
Knox—Glenn D. Grubb
300 Medical Center Bldg., Knoxville
Knox—Thos B. Drinnen
Medical Arts Bldg., Knoxville
Knox—James G. Eblen----611 W. Main, Knoxville
Knox—Oliver W. Hill, Jr.--603 W. Main, Knoxville
Knox—Robert P. Layman
601 Walnut Street, Knoxville
Knox—Lewis Y. Keith----------------Knoxville
Shelby—C. B. Etter----Madison Avenue, Memphis
Obion—Hal E. Bennett---------------------Troy
Washington—Irving L. Ochs------Mountain Home

DOCTORS WHO APPLIED FOR COMMISSIONS, BUT REJECTED ON PHYSICAL GROUNDS

County *Name* *Address*

Davidson—Lynch D. Bennett
Doctors Bldg., Nashville
Davidson—David W. Hailey
Bennie-Dillon Bldg., Nashville
Davidson—Eston D. White------------Nashville
Davidson—V. J. Wong
Nashville General Hospital, Nashville
Davidson—Joe E. Sutherland----Madison College
Davidson—J. H. Solomon------------Old Hickory
Gibson—Henry N. Moore------------------Milan
Hamilton—D. Isbell
552 McCallie Avenue, Chattanooga
Hamilton—D. B. Karr
546 McCallie Avenue, Chattanooga
Hamilton—Fred E. Marsh
546 McCallie Avenue, Chattanooga
Hamilton—J. R. Martin
546 McCallie Avenue, Chattanooga
Hamilton—J. J. Word
Erlanger Hospital, Chattanooga
Knox—Charles W. Black---------------Knoxville
Knox—William E. Clark
607 W. Main Avenue, Knoxville
Knox—George L. Inge-----------------Knoxville
Knox—Joel C. Morris
609 W. Main Avenue, Knoxville
Loudon—J. P. Cullum---------------Lenoir City
Washington—John F. Moore--------Johnson City
Washington—Walter D. Hankins-----Johnson City

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H. H. SHOULDERS, M.D., Editor and Secretary

JUNE, 1942

EDITORIAL

PHYSICIANS IN WAR SERVICE

A large number of doctors in Tennessee have applied for commissions in one of the branches of the armed service.

It is becoming increasingly apparent that before very long the difficulty of meeting civilian and institutional medical needs will be greater than the difficulty of supplying the Army and Navy with medical officers.

It is of the greatest possible interest to the membership and to the public at large to know what the medical profession is doing in this emergency. On another page of this issue we are publishing a list of the doctors who have applied for a commission. The list is broken down into four categories: (1) Those on active duty in the Army or Navy; (2) those who are commissioned and awaiting orders; (3) those who have signed an application for a commission, stood a physical examination and are awaiting information; (4) those who have applied for a commission and been rejected on physical grounds.

No apology is made for the fact that the present list is incomplete. Changes are taking place from day to day. Members are requested to keep this office supplied with information as to where men are serving, together with other news items of interest.

MY RELATIONSHIP TO MY COUNTRY

The following statement was forwarded to the office by Dr. Hamilton V. Gayden, Secretary of the Nashville Academy of Medicine and Davidson County Medical Society, just before he left for service with the United States Army. The footnote furnishes a full explanation of the statement:

> "Whatever be the fortunes of America, I accept them for my own. Born upon her soil of a father thus born before me from an ancestry that occupied it while yet it was a part of England's possessions, she is in every sense my mother. I shall die upon her bosom. She shall know no peril but it is my peril, no conflict but it is my conflict, and no abyss of ruin into which I shall not share her fall. May the Lord God cover her head in her day of battle."
>
> This was said by Dr. Benjamin Morgan Palmer in 1860. He then spoke of the South and followed her fortunes to the bitter end. When the war was over, there was no American more constantly and aggressively patriotic. I have changed "South" to "America" as he would approve at this day. It is a clarion call to true patriotism at this time when so much traitorous passivism is promulgated.
>
> New Year greeting, 1924, Jacob M. Dickinson to family and friends.

A FEDERAL INCOME TAX ON HOSPITALS AND COLLEGES

From information believed to be reliable, the United States Treasury Department has suggested to Congress that an income tax be levied on institutions which have heretofore been exempt from the payment of income taxes.

According to a statement made by an adviser to the Treasury Department, it is the purpose of the legislation to secure revenue from the business conducted by the eleemosynary institution. For example, a corporation conducting a hospital might also own and operate an apartment house. An institution of learning might operate a hotel. The apartment house and the hotel are operated for a profit, but the profit on the operation of these institutions is consumed in the operation of the eleemosynary institution.

If the legislation in its present form should be passed by Congress, it means that private hospitals would be taxed. For example, a general hospital admits charity patients, part-pay patients, and full-pay patients. A profit is made on the full-pay patients. A loss is sustained on the charity and part-pay patients. If the profit on the pay patient is taxed, then many institutions must either cease to admit charity patients or increase the rate on part-pay patients or close the institution.

There are so many different departments in Washington trying to think for the public that it is difficult to coordinate their thinking. One department wants to extend federal benefits to people in a certain income level; another department of the government wishes to obtain an income tax from people in the same income level.

The passage of this legislation could work a tremendous hardship on the hospitals of Tennessee.

The complicated type of bookkeeping alone would involve a tremendous outlay in cost.

OSTEOPATHS AND THE ARMY MEDICAL CORPS

The following two communications have been received from Mr. J. W. Holloway, Jr., Director, Bureau of Legal Medicine and Legislation, American Medical Association, one under date of May 4, 1942, and the other under date of June 1, 1942, which should be of general interest to the profession. They are reproduced for the information of the membership.

It should be stated also that the Chairman of the Legislative Committee, Dr. N. S. Shofner, has written the Senators and Representatives in Congress with reference to their attitude on this legislation.

May 4, 1942.

To the Secretaries of the State Medical Associations:

The Senate Committee on Military Affairs has reported H. R. 4476 to the Senate with the recommendation that it pass.

The first section of the bill, as reported, reads, in part:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of War be, and hereby is, authorized out of any moneys available for the War Department . . . to provide for the employment of interns *who are graduates of or have successfully completed at least four years' professional training in reputable schools of medicine or osteopathy* in the Medical Department, at not to exceed $720 per annum."

This authorization will represent permanent legislation. It does not make it mandatory that the War Department select interns from osteopathic schools, and if the present high standards are maintained in the Medical Department, no such appointments will be made. The authorization, however, does constitute to a certain extent a congressional viewpoint that osteopaths will construe as a recognition of their competency to serve in the Medical Corps of the Army. This implication will be pointed out by the osteopaths not only in connection with any future congressional demands they make, but also in connection with state legislation that they may sponsor.

For the foregoing reasons, it is important that state medical associations urge their senators to eliminate so much of the authorization from the bill as is underscored in Section 1. If the underscored language be eliminated, the War Department will still be authorized to employ interns and may exercise full discretion in their selection.

Sincerely yours,
J. W. HOLLOWAY, JR.

June 1, 1942.

FEDERAL LEGISLATIVE BULLETIN 16

Osteopaths and the Army Medical Corps.—On May 12 the House of Representatives had up for consideration a bill, S. 2025, to readjust the pay and allowances of personnel of the Army, Navy, Marine Corps, Coast Guard, Coast and Geodetic Survey, and Public Health Service. Section 20 of the bill, in the form in which it was reported to the House, outlined the conditions under which, in time of war, persons may be appointed as commissioned officers in the Army. Representative Costello, Hollywood, California, offered an amendment to this section, reading as follows:

"*Provided*, That nothing in this section shall preclude the appointment of commissioned officers for service in the Medical Corps in the Army of the United States made in part from among graduates of reputable schools of osteopathy, who are licensed or eligible for license under state law to practice medicine, or osteopathy, as the case may be, and who are otherwise qualified under such regulations as the President may prescribe."

The amendment was rejected. Before action was taken on it, however, the following discussion took place on the floor of the House:

"Mr. May (Kentucky): Will the gentleman yield?

"Mr. Costello (California): I yield to the gentleman from Kentucky.

"Mr. May: Does the gentleman mean by his amendment to include the Army only, or does he mean it to apply, like all the other provisions of the bill, to the Army and Navy?

"Mr. Costello: The amendment simply refers to the Army because the original language of this particular section of the bill referred only to the War Department, and for that reason the amendment refers only to the War Department.

"Mr. Vinson of Georgia: May I say the amendment that has been adopted in this same section refers to the Navy. I am wondering if the gentleman cares to broaden it to include the Navy, before he discusses his amendment, and whether he has taken the matter up with the medical branch of the Navy to see what its reaction might be.

"Mr. Costello: I did not take the matter up with the Navy Department and have not submitted it to them. I do not know exactly what the practice of the Navy is in regard to the appointment of osteopaths as medical officers in the Navy. The language of Section 20, I may say, was offered before the committee at an executive hearing and was adopted last Tuesday just before the bill was reported to the House. For this reason there was no opportunity to suggest this language because Section 20 was not a part of the proposed legislation. This amendment has not been submitted to the War Department and it has not been submitted to the committee, but I believe the language is desirable in view of the fact that the War Department is going to have need for approximately 23,000 doctors during the coming year. Those are in fact the War Department's own figures. Some estimates run as high as 35,000.

"There are available in this country approximately nine or ten thousand osteopathic physicians and surgeons, men who have taken a course of study in medicine as well as osteopathy, yet the War Department for one reason or another declines to commission any osteopaths in the Medical Corps. If they are drawn into the service under the Selective Service Act, then they come in as ordinary privates and the War Department fails to avail itself of the trained skill and learning of these men and fails to utilize them in the Medical Corps as officers, as well they might.

"I believe this is a serious mistake, and it is the subject of some criticism of the medical department of the Army in that they do not utilize osteopaths as well as regular M.D.'s.

"Mr. Brooks (Louisiana): Will the gentleman yield?

"Mr. Costello: I yield to the gentleman from Louisiana.

"Mr. Brooks: As I understand the gentleman's amendment, it simply makes it possible, in the event the Army desires to use osteopaths, to use them under the terms of this amended bill?

"Mr. Costello: The gentleman is correct.

"Mr. Brooks: It is not mandatory?

"Mr. Costello: No. Section 20 limits the Army in the appointment of commissions to civilians, and my amendment will make it clear that there are no restrictions which will prevent an osteopath coming in from civilian life into the Army and being given a commission.

"There is nothing mandatory about the legislation. It is merely permissive. In fact, it is a sort of a direction to the Medical Corps of the Army that it is the desire of the Congress that trained osteopathic physicians and surgeons shall be commissioned as medical officers.

"Mr. Elston (Ohio): Will the gentleman yield?

"Mr. Costello: I yield to the gentleman from Ohio.

"Mr. Elston: Since the Navy has been included, would not the gentleman's amendment, as drawn, preclude the Navy from considering the matter? Should not the Navy be included so that if it wants to take osteopaths into the service it can do so?

"Mr. Costello: It would not make any difference to me if the Navy is included in the language of the amendment. The original language was drawn to include only the Army because Section 20 included only the Army.

"Mr. Vinson of Georgia: I may say the joint pay bill deals with both services, and as far as I am concerned, I have no objection because it is discretionary anyway, it is not mandatory, and probably they will not do anything about it. I am perfectly willing to have it in there, though.

"Mr. Costello: Mr. Chairman, I ask unanimous consent that the amendment be corrected to read 'Medical Corps in the Army or Navy of the United States.'

"Mr. Chairman: Is there objection to the request of the gentleman from California?

"There was no objection.

"The Chairman: The question is on the amendment offered by the gentleman from California, as amended.

"The question was taken; and the chair being in doubt, the committee divided and there were: ayes twenty-three, noes twenty-four.

"So the amendment was rejected."

On May 13 Representative Fenton of Mahanoy City, Pennsylvania caused the following material to be printed in the appendix to the Congressional Record:

"Mr. Fenton: Mr. Speaker, yesterday an amendment was offered to the committee of the whole House that would permit the practitioners of osteopathy to be granted commissions in the Medical Corps of the Army. The committee rejected this proposed amendment and I am glad at this time to have printed in the Record copy of a letter from the surgeon general of the United States Army outlining some of the reasons why it would be unwise to consider practitioners of osteopathy for commissions in the Medical Corps of the Army of the United States with which I am in accord.

"War Department, Office of the Surgeon
General, Washington, May 13, 1942.
Hon. Ivor D. Fenton
House of Representatives
Washington, D. C.

"Dear Mr. Fenton: The following are some of the reasons why it would be most unwise to consider practitioners of osteopathy for commissions in the Medical Corps of the Army:

"Since the establishment of the medical department of the Army in revolutionary days it has been the endeavor of those responsible for its organization and maintenance to hold to requirements of the highest current standard for membership. It has recognized only that school of medicine that has its foundation on proven scientific research and practices in the healing art that are subscribed to by the vast majority of physicians throughout the world. This standard has kept apace with the vast strides in medical and surgical progress and in the teaching of medicines. At the present time appointment in the Medical Corps is contingent upon graduation from a school of regular medicine chartered to award the degree of doctor of medicine, this to be followed by the completion of a year's internship in a hospital offering a general service and recognized as of a standard to award an approved certificate of internship. Although commissions are issued to recent graduates of these schools, they are not allowed to go on active duty until their internships are completed.

"The surgeon general is charged with the preservation of the physical well-being of the military forces. This responsibility cannot be discharged in the absence of fixed standards of preventive measures, diagnostic procedures, and curative therapy. These standards are found only in the school of regular medicine and are based upon scientific fact that precludes the integration of healers of schools that are founded on dogma or cult.

"Osteopaths are granted licenses to practice healing in certain states, but there are many states where they are not recognized as physicians, but as practitioners of manipulative measures only. The government would be open to serious criticism if advocates of limited or auxiliary methods of treatment were given commissioners in the Medical Corps and allowed to care for the sick and wounded.

"One of the prime functions of the Medical Department is in the prevention of diseases and keeping the soldier fit for duty. This demands the highest type of scientific medicine and does not depend upon particular and special therapeutic procedures which are recognized outside the field of scientific medicine.

"To accede to the desire of every interested group of persons engaged in the practices of auxiliary medical services for commissions in the Medical Corps is not justified by the duties to be performed nor by the needs of the military service.

"The citizens of this country who give their sons to the military service have every right to expect that they will receive the highest type of medical attention when they are sick or wounded. In order to carry this out it is imperative that only those physicians whose training has been based upon sound scientific principles can be utilized in their care. This is particularly true in the case of battle casualties, in which the particular procedures of osteopathic practice are not considered applicable.

"James C. Magee,
"Major General, United States Army, the
Surgeon General."

H. R. 4476 has passed the Senate, providing for sundry matters affecting the military establishment. There was no discussion of this bill on the floor of the Senate, and it was passed without a recorded vote. As passed by the Senate, this bill retains the authorization under which the selection of osteopaths for training as interns in Army hospitals is permissible. The authorization is identical in phraseology with the authorization that formed a part of the Army appropriation bill passed in 1941.

As pointed out in FLB—12, the selection of interns pursuant to the authorization contained in the appropriation bill was completed several months ago. No osteopath was selected. The authorization contained in H. R. 4476 is not mandatory on the War Department; it is permissive in form only.

Before H. R. 4476 was passed by the Senate, the following amendment to the bill was adopted, limiting the period within which its provisions will be operative:

"The provisions of this Act shall remain in force during the continuance of the present war and for six months after the termination of the war, or until such earlier time as the Congress by concurrent resolution or the President by proclamation may designate."

Civilian Medical Services for Military Personnel.—The Sixth Supplemental National Defense Appropriation Act, 1942, was approved by the President on April 28. It makes available additional funds for the national defense for the fiscal year ending June 30, 1942, including $151,240,000 for the Army Medical and Hospital Department. This sum may be used by the Army, in part, to provide necessary medical care and treatment in private hospitals for military personnel whether on duty or on furlough or leave of absence except when elective medical treatment has been obtained by military personnel in civilian hospitals or from civilian physicians and dentists.

Additional Funds for Public Health Service; Blood Plasma Reserve.—On April 11 the President transmitted to Congress a supplemental estimate of appropriation for the Public Health Service for the fiscal year 1943 amounting to $5,420,000. Of this amount, $5,000,000 will be used by the Public Health Service to undertake directly in defense areas measures to control mosquitoes in connection with the suppression of malaria, and to control dog flies near Eglen and Tyndall Airfields, and a school of flexible gunnery in Florida.

The remainder of the estimate, $420,000, will be used for a continuation of a program to provide reserves of blood plasma in hospitals not more than 300 miles from ocean or gulf coast having a capacity of not less than 200 beds, exclusive of bassinets. The reserves are to be established to meet any wartime contingency caused by enemy action which may necessitate blood transfusions to civilians. The program was initiated by the allotment of $292,500 from the "Emergency Fund for the President." The additional appropriation will permit a continuation of the program. Reference is made to a statement in THE JOURNAL, May 23, 1942, page 352, for a detailed discussion of the conditions under which grants to hospitals will be made for the purpose of establishing blood plasma reserves.

Rank of Members of the Navy Nurse Corps.—S. 2454, introduced by Senator Walsh, Massachusetts, and H. R. 6929, introduced by Representative Vinson, Georgia, and pending, respectively, in the Senate and House Committees on Naval Affairs. Identical bills prescribing the relative rank of members of the Navy Nurse Corps in relation to commissioned officers of the Navy.

Comment.—This legislation proposes that the members of the Navy Nurse Corps shall have relative rank as follows: (a) superintendent, the relative rank of lieutenant commander; (b) assistant superintendents, the relative rank of lieutenant; (c) chief nurses, the relative rank of lieutenant (junior grade); and (d) nurses, the relative rank of ensign. As regards medical and sanitary matters and all other work within the line of their professional duties, the members of the Navy Nurse Corps will have authority in and about naval hospitals and other medical activities next after the commissioned officers of the Medical Corps and Dental Corps of the Navy. The Secretary of the Navy is to be authorized to make the necessary regulations prescribing the rights and privileges conferred by such relative rank.

Compensation for Injured Air-Raid Wardens and Other Civilian Defense Workers.—H. R. 7042, introduced by Representative Celler, New York, and pending in the House Committee on the Judiciary. A bill to amend the United States Employees' Compensation Act to provide compensation for air-raid wardens and other civilian defense workers.

Comment.—This bill will bring within the benefits of the United States Employees' Compensation Act any person duly enrolled for an approved course of training for protective services engaged in civilian defense and any person who is appointed and assigned regular duties as a member of the protective services engaged in civilian defense. If any person so engaged suffers a traumatic injury while performing his duties, he will be entitled to all the benefits prescribed by the law for civil employees of the United States who are physically injured in line of duty or who dies as a result thereof. The term "traumatic injury" is defined to include only injury by accident, causing damage or harm to the physical structure of the body. It does not include disease in any form except as it results naturally from such injury.

Registered Pharmacists in Charge of Army Dispensaries.—S. 2484, introduced by Senator Lee, Oklahoma, and H. R. 7089, introduced by Representative Brooks, Louisiana, and pending, respectively, in the Senate and House Committees on Military Affairs. Identical bills to safeguard the health of persons in military service by requiring that registered pharmacists be placed in charge of Army dispensaries.

Comment.—This legislation directs the Secretary of War to take such action as may be necessary, and as may be possible in view of the number of registered pharmacists serving in or whose services are available to the Army, to assure that a registered pharmacist is placed in charge of each Army dispensary or similar establishment from which drugs are dispensed.

Veterans' Hospital for Florida.—H. R. 6980, introduced by Representative Hendricks, Florida, and pending in the House Committee on World War Veterans' Legislation. A bill to authorize the erection of a United States Veterans' Administration general medical-surgical hospital and domiciliary facility at St. Cloud, Florida.

Comment.—This bill proposes a federal appropriation of $1,750,000 for the construction of a general veterans' hospital and domiciliary facility, with a capacity of at least 500 beds, at St. Cloud, Florida.

Hospitalization of Military Personnel of the Present War.—H. R. 6982, introduced by Representative Rankin, Mississippi, and pending in the House Committee on World

War Veterans' Legislation. A bill to amend Veterans Regulation No. 10.

Comment.—This bill undertakes to amend the existing regulation of the Veterans' Administration relating to hospitalization of veterans so as to bring within its coverage any officer, enlisted man, member of the Army Nurse Corps (female) or Navy Nurse Corps (female) employed in the active military or naval service of the United States on or after December 7, 1941, and before the termination of the present war.

Medical Officers in Military or Naval Forces.—Subcommittee No. 3 of the House Committee on Military Affairs has scheduled a hearing on H. R. 3571 for Thursday, June 4, at 10:30 A.M. This bill, introduced by Representative McCormack of Massachusetts, proposes that "no individual who is licensed to practice medicine under the laws of any state, territory, or the District of Columbia shall be ineligible for appointment, or for examination for appointment, as a medical officer in the active or reserve components of the military or naval forces of the United States solely by reason of any rating or classification of the medical school from which such individual was graduated."

J. W. HOLLOWAY, JR.

A MESSAGE TO THE PUBLIC

It has been suggested that the public be told frankly that the prompt medical care which is usually available in normal times will not be available during the wartime.

The purpose of such a statement is to secure the cooperation of the public in making such adjustments as will be necessary.

No one can quarrel with the idea that the men in the service deserve the first call for medical services.

A large number of the most active members of the medical profession will be in the Army or the Navy. The doctors left at home must do the work they are accustomed to do under normal conditions and in addition the work others have been doing.

Patients can cooperate in several ways toward making good service available to all during the emergency. First, bring the patient to the doctor when possible to do so instead of asking the doctor to come to the patient. In many instances, the doctor can see several patients in the time required to travel to one.

Secondly, do not delay calling the doctor until late at night except when justified by the emergency. A doctor is often called late at night to see a patient who has been ill all day and possibly should have been seen the day before. It is too often the case that a doctor is called at night to see a patient in a home he passed in making his afternoon calls.

By observing these two suggestions, the public will contribute to the preservation of the best medical care possible during the emergency. The suggestions are: (1) carry the patient to the doctor when possible; (2) call in the daytime when illness occurs and give the doctor a chance.

DEATHS

DR. BERNICE TURNER WRIGHT

Dr. Bernice Turner Wright, Memphis; University of Tennessee, College of Medicine, Memphis, 1927; aged thirty-nine; died in March, 1942, of an injury received in an automobile accident.

DR. ROBERT G. REAVES

Robert G. Reaves was born in Greene County, Tennessee, July 11, 1887. He was graduated from Tusculum in 1911 and from the University of Virginia in 1915.

He interned, doing general work, in Providence Hospital, Washington, D. C., 1915-1916. He interned, doing eye, ear, nose, and throat, in the Massachusetts Charitable Eye and Ear Infirmary, Boston, Massachusetts, July, 1916-December, 1917.

In December, 1917, he entered the Navy. In 1918 he was promoted to lieutenant. August, 1919, he resigned from the Navy.

Doctor Reaves was past president of the Knox County Medical Society.

Doctor Reaves was a member of Otolaryngological Consultation Staff of Beverly Hills Sanitarium; Otolaryngologist, Knoxville General Hospital and St. Mary's Hospital; American Academy of Ophthalmology and Otolaryngology; American Medical Association Board; Southern Medical Association.

He died on April 25, 1942.

RESOLUTIONS

Dr. Robert G. Reaves

The reactions of a professional group, like that of family or an individual to the loss of one of their group, will vary in accordance to their sense of loss. This in turn depends on the completeness with which the individual during life succeeded in filling his niche in the scheme of things and in the variety of ways in which he made successful contacts.

There are a few among us who would desire to lay down the criteria by which one might judge the success with which these contacts were made, but it is our wont and perhaps wisely held that we think of the contributions to the sum total of living which that person may have made. The profession in which he strove, the community in which he lived, and all those institutions that dedicate themselves to man's uplift and welfare—these expect to be recipients of a useful man's efforts, and the acuteness of their sense of loss depends like that of the family and the inner circle of friends on the completeness and on the fullness with which the departed one gave.

It is with these thoughts and enforced with the knowledge of the worthiness and strength of his character, the unquestionable honesty of his purpose that seem to make ethics a useless word. It is these things that make us say that Dr. R. G. Reaves will be missed. While we congratulate ourselves on our association with him, we would feel inadequate if our knowing him did not inculcate the desire to become a better physician and a better citizen.

R. B. Wood, M.D., *Chairman.*
R. S. Leach, M.D.
W. R. Cross, M.D.

Dr. M. H. Wells

On April 1, 1942, when Dr. M. H. Wells was struck and killed by a train, the medical profession and citizens of Wilson County lost a friend and benefactor, whose worth was recognized by all who knew him.

Doctor Wells was in his eightieth year at the time of his death. He graduated from the University of Nashville Medical School in 1901, and has practiced his profession since that time. He held membership in the American Medical Association, the Southern Medical Association, and the Wilson County Medical Society. He was a member of the Methodist Episcopal Church, in which he was very active.

By his colleagues Doctor Wells will be remembered as a representative of the highest in ethics, religion, and devotion to duty. A tribute said of him many times was: "There is a gentleman." Although his own health had been greatly impaired for several years, he was en route on a mercy errand when his death occurred.

Therefore Be It Resolved, That his passing has caused wide sorrow and deep loss to the medical fraternity and to the community.

Be It Further Resolved, That a copy of this resolution be sent to the family, a copy given to the local newspapers, a copy sent to The Journal of the Tennessee State Medical Association, and a copy retained in the minutes of the Wilson County Medical Association.

J. J. McFarland, Sr., M.D.
F. B. Dunklin, M.D.
Phillip Turner, M.D.

Phil Turner, *Secretary,*
Wilson County Medical Society,
Lebanon, Tennessee.

Dr. Robert O. Currey

Dr. Robert O. Currey was born May 8, 1881, at Fayetteville, Georgia. He received his early education in Albertville, Alabama. In 1912 he graduated from the University of Tennessee and went to Orme, Tennessee, to be company doctor for the Battle Creek Coal Company, where he remained a year. After leaving the coal company post, he moved to South Pittsburg near by and practiced medicine for six years before coming to Chattanooga in 1920.

Upon coming here Doctor Currey established his own hospital on East Tenth Street, using the name of the Currey Sanitarium. He later became a partner in the Physicians and Surgeons Hospital, but left this work in 1924 to resume private practice. For the past few years he had been associated in practice with his son, Dr. Doyle E. Currey.

Doctor Currey was a member of the Northside Baptist Church, also of the Chattanooga and Hamilton County Medical Society, the Tennessee State and American Medical Associations.

He died, after a brief illness, Sunday morning, April 26, 1942. Surviving are his wife, Mrs. Alice E. Currey; two daughters, Mrs. M. B. Smith, Mrs. C. E. Smith; two sons, Aurelian and Dr. Doyle E. Currey, all of Chattanooga; father, W. N. Currey, Flintville, Tennessee; two sisters, Mrs. Doster Griffith, Gadsden, Alabama, and Mrs. Malcolm Bynum, Flintville, Tennessee; and six brothers, Raymond Currey, Florence, Alabama; Will Currey, Albertville, Alabama; Dr. Tom and Willie Currey, Chattanooga; Septimus and Frank Currey, Flintville, Tennessee.

Doctor Currey possessed a charming personality and pleasing disposition, and was liked very much by his fellow practitioners and the public at large, and will be greatly missed by all.

Therefore, Be It Resolved, That the Chattanooga and Hamilton County Medical Society deeply deplores the passing of Dr. Robert O. Currey.

Be It Further Resolved, That we extend to his bereaved widow, father, and other members of the family our sincere sympathy and condolence and that a copy of these resolutions and preamble be spread on the minutes of our Chattanooga and Hamilton County Medical Association, and that a copy be sent the family and THE TENNESSEE STATE JOURNAL and the *Journal of the American Medical Association*.

NEWS NOTES AND COMMENTS

Dr. Frank E. Whitacre, whose family lives in Sylvania, Ohio, is a prisoner of the Japs. He was head of the Department of Obstetrics and Gynecology at Peiping Union Medical College, Peiping, China, and is now interned in Manila, where he had been evacuated some months ago.—*The Ohio State Medical Journal*, June, 1942.

(Doctor Whitacre, before going to China, was instructor in obstetrics for the postgraduate course of the Tennessee State Medical Association.)

Any Army reserve officer who has been disqualified for active duty only because of a correctable physical defect and who fails to have that defect corrected in a reasonable time or states that he does not intend to do so will be discharged from the service, according to a recent War Department announcement. This policy does not apply to reserve officers disqualified because of a defect that is not correctable. Such officers will be separated from the service only by resignation.

THE LILLY CODE

"To provide the profession with medicinal products of highest quality and unvarying potency. To contribute to the progress of medicine by developing new and superior agents through research. To issue information about the uses of the products of the company through professional channels exclusively."

One of the most interesting pieces of literature which we have seen recently is a history covering the sixty-six years of Eli Lilly and Company.

Under present-day conditions we are so dependent on telephones that we are surprised to know there was no telephone on the desk when the Lilly Laboratory opened in 1876, for Alexander Graham Bell had just applied for a patent "on a machine to be known as a telephone."

The business was started on a capital of $1,300 in a building eighteen feet wide and fifty feet long. The working staff was made up of three people—Eli Lilly, his son, J. K. Lilly, and a woman helper.

At that time "while there were certain standards set up by the United States Pharmacopoeia and the National Formulary, the truth is that when Eli Lilly opened his doors to make products bearing the Lilly label, these standards were not rigidly adhered to." "The drugs used by the physicians of the eighties were of a nature that left the quality and potency of the product entirely to the integrity of the manufacturer."

The early and enthusiastic acceptance of

Lilly products by the profession is a testimonial to the high standards set by the house.

The continued growth of the firm and its present value to the medical man in particular and to the world as a whole can be attributed in large measure to the high ideals which, from the beginning, have motivated the policy expressed in the Lilly code.

CHANGE OF ADDRESS

R. M. Price, Sweetwater, to United States Naval Hospital, Pensacola, Florida.

James R. Fancher, Camp Forrest, to 181st Field Artillery, East Garrison, Camp Roberts, California.

R. C. Vanderhoof, Milan, to Gulf Ordnance Plant, Aberdeen, Mississippi.

S. D. Sullenberger, Memphis, to Elfin Road, Lookout Mountain, Chattanooga.

Charles S. Gresham, Johnson City, to 1215 Hollywood, Jacksonville, Florida.

H. M. Ausherman, Chattanooga, to State of Wisconsin General Hospital, Madison, Wisconsin.

A. M. Carr, Knoxville, to Alva, Kentucky.

Russell A. Hennessey, Memphis, to Lovell General Hospital, Fort Devens, Massachusetts.

B. H. Webster, Nashville, to Clarksville.

Starnes E. Walker, Dayton, Ohio, to Veterans Administration Facility, Fayetteville, North Carolina.

Donald R. Roach, Morristown, to Station Hospital, Army Air Base, Jackson, Mississippi.

H. B. Cupp, Mountain Home, to Station Hospital, Camp Polk, Louisiana.

MEDICAL SOCIETIES

Davidson County:

May 12—"Cardiospasm," by Dr. Jack Witherspoon. Discussion opened by Dr. W. H. Witt.

May 19—"Headaches," by Dr. Albert Weinstein. Discussion opened by Dr. John Youmans.

Case report, by Dr. W. C. Dixon.

May 26—"Internal Podalic Version," by Dr. Milton Smith Lewis. Discussion opened by Dr. Sam Cowan.

Case report, "Erythroblastosis and Intragroup Transfusion Reactions," by Drs. L. J. Caldwell, James H. Matthews, and Jimmy L. Pinkston.

Hamilton County:

May 21—Meeting at Pine Breeze Sanitarium.

May 28—"Historical Aspects of Allergy," by Dr. T. C. Crowell.

June 4—"Treatment of Compound Fractures," by Dr. E. Dunbar Newell.

Paper scheduled for July 2—"Carcinoma Breast—Valuation of Surgery, Radium, and X-ray," by Dr. Edward T. Newell, Sr.

Knox County:

May 19 — "Problems of Industrial Health," by Dr. Herbert Bolin. Drs. Kyle Copenhaver and Edward S. Clayton led the discussion.

May 26—"Symposium—Gall-Bladder Disease," by Dr. Sam M. Cooper. "Medical Management," by Dr. S. J. Platt. Discussors were Doctors DeSautelle and McReynolds.

June 2—"Talks on Medical History—The Renaissance," by Dr. Oliver Hill.

Wilson County:

The Wilson County Medical Society met on June 4. Dr. F. B. Dunklin, Lebanon, read a paper on "Diseases of the Spleen." A case report was presented by Dr. J. L. Ames, Mt. Juliet.

There will be a meeting on July 9, at which time Dr. W. K. Tilley will discuss "Surgical Diseases of the Stomach." Dr. Phillip Turner will present a case report.

OTHER MEDICAL SOCIETIES

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, MAY 8, 1942

1. Case Report: "Granulosa Cell Tumor in an Infant," by Dr. Cloyce Bradley.

An eight-month-old girl had a large tumor mass in the right side of the abdomen which had been noted for the past week. At operation the tumor was found to be a large semicystic ovarian tumor twisted on its pedicle. Microscopical sections showed this to be a granulosa cell tumor. The child made an uneventful recovery. Ovarian tumors in small infants were discussed. This type of tumor usually produces precocious sexual changes. None was present in this patient.

This case was discussed by Drs. Ralph Larsen and Katharine Dodd.

2. "Studies on Intestinal Absorption," by Drs. C. S. Robinson, R. H. Kampmeier, Hugh Mills, and Hugh Luckey.

Using isolated loops of intestine, the mechanism by which the intestinal reaction is regulated has been elucidated. Further information has been secured relative to the electrolyte movements in various parts of the gut. A start was made on the application of these studies to human studies.

This paper was discussed by Drs. W. E. Garrey, Hugh Mills, J. Philip Hyatt, and Charles E. King.

3. "Two Unusually Large Brain Tumors," by Drs. Cobb Pilcher and Ralph Angelucci.

Two cases of brain tumor are presented because of the exceptional size.

The first is a meningioma, weighing 371 grams, situated in the right occipital lobe of a twenty-five-year-old man.

The second was a congenital vascular anomaly composed of a huge dilated venous cavity communicating with a tangled mass of anomalous vessels in the left frontal lobe of a twelve-year-old girl.

Both tumors represent the largest reported lesions of their type and both were removed successfully.

This paper was discussed by Drs. Cobb Pilcher, W. de Gutierrez-Mahoney, and Ralph Larsen.

The Upper Cumberland Medical Society had its forty-eighth annual meeting at Standing Stone Park on June 2 and 3. The following papers were read:

"Tuberculosis," by Dr. Z. L. Shipley, Cookeville. Discussion opened by Dr. A. Z. Hall, Pleasant Hill.

"Treatment of Intestinal Intoxication of Infants," by Dr. R. C. Gaw, Gainesboro. Discussion opened by Dr. Thayer S. Wilson, Gordonsville.

President's address by Dr. H. B. Nevans, Livingston.

"Common Sexual Disorders," by Dr. C. B. Roberts, Sparta. Discussion opened by Dr. C. S. McMurray, Nashville.

"Infections of the Hand," by Dr. W. A. Howard, Cookeville. Discussion opened by Dr. Thurman Shipley, Cookeville.

"Dysentery," by Dr. John Mason, Cookeville. Discussion opened by Dr. Price Duff, Crossville.

"Convulsions in Childhood," with report of cases, by Dr. J. T. Moore, Algood. Discussion opened by Dr. Fred Terry, Cookeville.

"The End Results of Radical Mastectomy in Carcinoma of the Breast," by Dr. L. W. Edwards, Nashville.

"Management of Tumors of the Breast" with lantern slides, by Dr. Carl R. Crutchfield, Nashville. Discussion of two last papers by Dr. Cleo Miller, Nashville.

"Sinobronchoectasis," by Dr. H. S. Shoulders, Nashville. General discussion.

"Peptic Ulcers," by Dr. Sam B. McFarland, Lebanon. Discussion opened by Dr. Lillard Sloan, Carthage.

"Minor Injuries of the Cornea and Iris," by Dr. W. M. Brown, Livingston. Discussion opened by Dr. R. L. Witherington, Cookeville.

A case report by Dr. Germaine Gentzer, Livingston. Open discussion.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Spinal Anesthesia with Crystalline Pontocaine Hydrochloride. Ruth M. Latham, A.B., M.D., F.I.C.A. Anesthesia and Analgesia, January-February, 1942.

This paper deals with 467 consecutive administrations of crystalline pontocaine hydrochloride used for twenty-two different types of operations over a period of twenty-four months. Some of these operations were for gall-bladder and stomach procedures. For high anesthesias it was injected in combination with dextrose solutions and for low anesthesias it was dissolved in the spinal fluid.

The positive contraindications are procedures above the diaphragm, advanced cardiac decompensation, spinal cord disease, infections at the site of injection, and children under fourteen years of age. Borderline contraindications are hypertension, moderate cardiac decompensation, marked anemia, severe shock, cachexia, uncontrolled diabetes, septicemia, and severe intra-abdominal pressure.

Complications noted were fall in blood pressure, nausea and vomiting, headache, hiccough, muscular weakness, urticaria, precordial pain, and pulmonary complications. There were no fatalities.

Thirty-nine of these cases required supplemental inhalation anesthesia. In 88.2 per cent results were excellent. In those not entirely satisfactory the cause was due more to technical considerations rather than the anesthetic itself.

INTERNAL MEDICINE

By R. B. Wood, M.D.
By D. R. Thomas, M.D.
Medical Arts Building, Knoxville

The Variations of the Bactericidal Effect of Sulfathiazole on Different Strains of Escherichia Coli. H. F. Helmholz. Proceedings of Mayo Clinic, April 1, 1942.

Testing the bactericidal effect of sulfathiazole on forty-one strains of escherichia coli, the authors found a low resistance of most strains. All but four strains were killed off in seventy-two hours by a concentration of two milligrams per 100 cubic centimeters of urine, and only strain twenty-two was resistant to 200 milligrams per 100 cubic centimeters. It was also found that some strains succumbed to one milligram per 100 cubic centimeters and ninety per cent of the strains were killed off by a concentration of two milligrams per 100 cubic centimeters.

Two points of significance were produced in this work. First, there is a rapid multiplication of bacteria for the first few hours, and this precedes the phase of bactericidal action. Second, the concentration of bacteria decidedly influences the result. The less the number of bacteria per 100 cubic centimeters the greater the bactericidal action of the drug. Hence, the value of diuresis and the poor result in infected residual urine.

Comparison of Bacteriostatic Effects of the Sulfonamide Drugs upon the Growth of Twenty-Five Strains of Streptococcus Viridans. Mary Poston, M.A., and Edw. S. Orgain, M.D. American Journal of Medical Science, April, 1942.

This is a follow-up to work previously done, in which the effects of five separate compounds of sulfanilamide on fourteen strains of streptococcus viridans in vitro were studied. Three new compounds and four of the previous ones are used on the fourteen strains previously used and on eleven new strains. Sulfanilamide, sulfapyridine, sodium sulfapyridine, sulfathiazole and sodium sulfathiazole, sulfadiazine and sodium sulfadiazine were used on twenty-five different strains of the streptococcus viridans recovered from blood of patients.

"The results indicate not only a great variation in the effectiveness of these drugs against a large number of strains of a single species of bacteria, but also a great variation in the susceptibility of each strain to various drugs. In this series sodium sulfapyridine exhibited the most marked effectiveness against the greatest number of strains."

Enhancing the Diuretic Action of Mercurial Compounds with the Sodium Salts of Dehydrocholic Acid. Ugo de Castro, M.D. Bullettino delle Scienze Mediche, Vol. 106, No. 6, 1934.

The author investigated the diuretic action of salyrgan and of decholin sodium given alone and in combination to normal persons, to persons with cirrhosis of the liver (alcoholic and syphilitic), and to cases with polyserositis. The increased diuresis produced was as follows:

Normal subjects: salyrgan, 17 to 77 per cent; decholin sodium, 52 to 94 per cent; salyrgan decholin sodium, 57 to 229 per cent.

Cirrhosis of liver: salyrgan, 18 to 385 per cent; decholin sodium, 13 to 76 per cent; salyrgan decholin sodium, 37 to 451 per cent.

Polyserositis: salyrgan, 62 to 104 per cent; decholin sodium, 90 to 246 per cent; salyrgan decholin sodium, 100 to 532 per cent.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Thiamine Hydrochloride in the Treatment of Tryparsamide Amblyopia. P. J. Leinfelder and R. B. Stump. American Journal of Ophthalmology, May, 1942.

Two cases are reported in which ocular reactions were observed after the administration of tryparsamide. The first patient had a clinical pellagra prior to the administration of tryparsamide and had been given therapeutic oral doses of thiamine hydrochloride and nicotinic acid for eleven days before the first injection of tryparsamide. This case illustrates that thiamine hydrochloride has no prophylactic effect, for while therapeutic doses of thiamine hydrochloride and nicotinic acid resulted in rapid improvement of the pellagra syndrome, they did not prevent an ocular tryparsamide reaction. Vitamin therapy was not utilized for the second patient until definite evidence of peripheral contraction of the visual fields had occurred. In spite of large intramuscular doses of thiamine hydrochloride, progressive contraction of the visual fields continued. This patient received one injection of tryparsamide after definite recognition of the field changes, because it was hoped that the use of thiamine hydrochloride might prevent further changes in the fields and allow continuation of the treatment. However, when the fields showed further constriction, the administration of tryparsamide was discontinued. The end result in these cases was good in that visual acuity remained normal in one patient and would perhaps have been normal in the other if clouding of the cornea had not followed an iridocyclitis in one eye. Judging by the visual fields, thiamine hydrochloride did not have any mitigating effect on the severity of the tryparsamide reactions. Neither thiamine hydrochloride nor nicotinic acid apparently has any significant effect on the occurrence or progress of visual-field changes following tryparsamide therapy.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

A Comparison of Gentian Violet and Hexylresorcinol in the Treatment of Pinworm Infestation. Howard L. Evans, M.D., and Halcuit Moore, M.D. The Journal of Pediatrics, May, 1942.

It has been demonstrated that there is a high incidence of infestation with pinworms, enterobius (oxyuris) vermicularis, in the United States. The most effective remedies in the treatment of this condition have been hexylresorcinol (caprokol) pills and gentian violet pills with an enteric coating that releases the drug four and one-half hours after ingestion.

To compare the effectiveness of the two drugs the authors studied 102 children in an orphanage, ranging in age from six months to twenty-three years, most of them being between the ages of eight and fourteen years. The signs and symptoms usually attributed to these parasites were not observed to a significant degree in the patients, though ten girls had vaginitis which in every instance was relieved during the treatment.

The diagnosis of pinworm infestation was made by swabbing the perianal region with a glass rod having a strip of nonwaterproof cellophane wrapped about the end. This was removed and fastened with gummed label to a microscopical slide, clean surface up, for examination. Swabs were made each morning for seven consecutive days as soon as the child got out of bed, before he had a stool or bathed. This procedure revealed that eighty of the 102 inmates examined had pinworms, while only four of the group showed pinworm ova in the stools.

Half of the group of eighty were given, once a week for five weeks, hexylresorcinol pills in the dose of twelve milligrams per pound of body weight, the maximum single dose being one gram. This was given in one dose on an empty stomach in the morning, followed by two glasses of water, and nothing by mouth except water for the next five hours. The remaining forty patients were given gentian violet pills, having a four and one-half hour timed enteric coating in the dose of one milligram per pound of body weight per day. The dosage was divided into three equal parts, a third of the dose being given thirty minutes before each meal. The drug was given in this manner each day for a week, followed by a week without treatment, then a second week of treatment followed by a week rest period, and then a third week of treatment.

In eight of the forty children treated with hexylresorcinol nausea and vomiting occurred, four of whom were shifted to gentian violet treatment because these symptoms persisted. Of those treated with gentian violet, one had nausea and vomited, and two had nausea, but the symptoms subsided even though the treatment was continued.

The criterion of cure was negative swabs for seven consecutive days examined four weeks after completion of treatment, the interval being selected so that in any patients not completely cured, there would be time for remaining pinworms to multiply and deposit ova at the anus. By this test fifty per cent of the hexylresorcinol-treated children were cured and seventy-seven per cent of the children treated with gentian violet were relieved.

At the time of the final examination of the treated cases, four children who had previously shown seven negative swabs were positive. Also six of nine new children who had been admitted to the home during this interval showed pinworm ova. Because of the ease of infestation and reinfestation the authors suggest that all members of a family be treated where one is found to harbor pinworms, and it may be necessary to repeat the treatment some weeks or months later.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Treatment of Peritendinitis Calcarea in the Shoulder Joint. I. Klein and I. S. Klemes. Radiology, Vol. 37, pp. 325-330, September, 1941.

In the experience of the authors only about twelve per cent of cases showing calcification around the shoulder joint undergo spontaneous resolution.

The most radical form of treatment is surgery, which consists of incision and removal of the calcium deposit by curettage or of needling. A more conservative procedure is to use physiotherapy. Such treatment ultimately gives relief of pain, but the deposit of calcium is not absorbed and the average duration of the disability is fifty days.

Fifty-two cases of peritendinitis calcarea over an eight-year period are reviewed. During the first five years physiotherapy was used and during the past three years roentgen ray treatment was used.

Roentgen ray treatment is recommended as the most effective means of treatment. The average duration of the painful period of the disease was only ten days, with disappearance of the acute symptoms in one week. Moreover, in most cases there was a gradual absorption of the calcium.

A course of X-ray treatments was given consisting of 75 r to 100 r in air every three or four days for four doses; 125 kilovolts and a filtration of four millimeters aluminum, or 180 kilovolts and five-tenths millimeter copper plus one millimeter aluminum and fields varying from eight by eight centimeters to ten by ten centimeters were used. A second course with the same factors was given after a month's rest.

Conclusions

It would appear from our experience that roentgen therapy is the optimal method of treating peritendinitis calcarea of the shoulder joint since it reduces considerably the period of disability and tends to bring about resolution of the calcification. It has also the advantage of conservatism.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

Influence of Temperature on Sulfathiazole Therapy of Gonococcal Infections. Frederick B. Bang. Journal of Urology, March, 1942.

Since White and Parker demonstrated that the thermal death time of the streptococci was shortened by the administration of sulfanilamide, Wengatz, Boak, and Carpenter have had similar experience with their experiments with gonococci.

The author studied the chemotherapy of gonococcal infections of ten-day chick embryos at temperatures of thirty-three degrees, thirty-six degrees, and thirty-eight degrees centigrade. The organisms continued to grow at all temperatures after the incubation for twelve hours.

After the addition of sulfathiazole in concentrations varying from one to 3,200 to one to 400, it was found that in the one to 3,200 concentration at thirty-three degrees centigrade all cultures were still positive, but at thirty-eight degrees centigrade only about sixty per cent were positive. In the one to 800 concentration at thirty-three degrees centigrade about thirty per cent were positive, while at thirty-eight degrees centigrade all cultures were negative except one. It is to be noted that therapy is more effective above thirty-seven degrees centigrade.

In a series of twenty-five patients with acute gonorrheal urethritis treated with sulfathiazole alone, ten still had positive cultures between the seventh and fourteenth days, or sixty per cent were cured.

A series of twenty-two hospitalized male patients with acute gonorrheal urethritis was treated for five days with sulfathiazole combined with heat therapy. Eleven were given temperatures of 104 to 105 degrees for four hours in a Kettering hyperpyrexia machine. Eleven received diathermy over the pubis. All therapy was discontinued at the end of five days and the patients were checked for cures for the following week. There were nineteen negative and three positive cases, or eighty-six per cent cures.

It is to be noted that there were twenty-six per cent more cures with sulfathiazole plus heat than with sulfathiazole alone.

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Volume XXXV JULY, 1942 No. 7

INDUSTRIAL HEALTH AND THE PRACTICING PHYSICIAN

C. M. PETERSON, M.D.,* Chicago, Illinois

About a year and a half ago the director of the bureau of industrial hygiene in one of our state health departments asked the personnel manager of a good-sized machine tool company to maintain sickness records as a means of analyzing the causes of employee absenteeism. The plant was most cooperative, and after careful study the conclusion was reached that considerable sums in lost wages and in shop production could be saved if more adequate industrial health supervision could be provided for the plant personnel. In the course of events a full-time industrial physician and three full-time industrial nurses were employed to supply this type of service to approximately 2,500 workers.

This procedure aroused interest elsewhere in the same industrial community, and other smaller plants were impressed with the contribution which medical service could make in lowering lost-time absences arising out of causes related to health. Since these plants felt unable individually to support a full-time physician, the local medical profession was consulted. It was suggested that individual practicing physicians might meet these new medical requirements if a basis agreeable to the employer and to the doctors could be arranged. After full discussion, a rotating scheme for personal visitation by physicians to the plants was hit upon, such visits to occur daily, to last at least an hour, and to occur at a definite time of day, usually in the morning. It is interesting to report that frequently these physicians have become interested enough so that they spend more time than is actually required. The manner of rotation and all other medical policies, including compensation, are determined by the local profession and recommendations sent directly to the personnel managers. All physicians in the community can participate if they care to, and nearly all of them do.

This experience compresses into one compact case history a number of very important considerations:

1. It exemplifies the growing recognition by industrialists of the value of industrial health service. We have something they can use, provided a method is devised which the employer can comfortably support and recognize as economically sound.

2. It supplies an answer, at least in part, to the vexing question of how industrial health can be brought to the small plant.

3. It dramatizes the immensely improved relationships which are rapidly coming to exist everywhere between the three major classifications of physicians on whom industrial medical activity largely rests:

a. The industrial hygienist, commonly associated with bureaus of industrial hygiene in state health departments, whose func-

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*Secretary, Council on Industrial Health, American Medical Association.

tions are mainly investigative or consultative directly to industry and to the medical profession, as well as certain duties in relation to enforcement of public health and sanitary codes relating to conditions of work. Prevention of industrial disability, whatever form it takes, occupies a prominent place in his thinking. Dr. L. M. Farner represents in Tennessee this important segment of industrial health activity, and I am sure he is most anxious to be of every possible assistance to the medical profession in this state.

b. The full-time physician serving in one or several plants who exemplifies specialty practice in this field. He is concerned very materially with prevention in all of its aspects, but in addition he must treat compensable disability and occupy himself with the many details of medical department administration.

c. The private practitioner in general or special practice who serves on call or part time. Best current estimates indicate that eighty to eighty-five per cent of medical service to industry is supplied in this fashion. As such, it has been mainly remedial in character to such an extent that medium-sized and smaller plants have been left without the considerable advantages of preventive industrial medicine and surgery.

Objectives and Program

The ability of the private practitioner to extend his interests in the industrial field and to face new problems and altered relationships has engaged the complete attention of the Council on Industrial Health for many months, both singly and in combination with the Subcommittee on Industrial Health and Medicine of the Health and Medical Committee, Federal Security Agency. From the very outset the council became convinced that its educational and other services could only be made effective through wholehearted cooperation with each state medical society. We have been in close touch with developments in the Tennessee State Medical Association through its own Committee on Industrial Hygiene under the chairmanship of Dr. Cecil E. Newell of Chattanooga. I am thoroughly convinced that, as the full implications unfold, no committee in your state association structure will be called upon to provide a higher type of leadership or will contribute more to existing medical standards or to the advancement of sound professional relationships. It now becomes desirable and even imperative to extend this same type of cooperative organization into appropriate counties to enable our membership to respond to the medical needs of industry as occurred in the community described at the beginning of this paper.

What kind of program do we have in mind? In the first place, we must agree upon objectives. The purpose of medicine in industry is to promote the health and physical well-being of industrial employees.

These objectives should be accomplished by:

1. Prevention of disease or injury in industry by establishing proper medical supervision over industrial materials, processes, environments, and workers.
2. Health conservation of workers through physical supervision and education.
3. Medical and surgical care to restore health and earning capacity as promptly as possible following industrial accident or disease.

Certainly no new principle is enunciated in this list of objectives, but it does provide a foundation on which the superstructure of specific functions in industrial medicine can rest and can be so regarded with confidence by all elements in the medical profession.

In the second place, we must define a little more in detail the medical needs of industry in terms of personnel and specific functions which will bring to plants both large and small good medical supervision, satisfactory both to those who receive as well as those who supply these services. A brief recital of these needs might read somewhat as follows:

For every plant:

1. A physician.
2. Nursing service.
3. Industrial hygiene service.
4. Proper correlation of plant health activities with:
    - a. The practicing profession.
    - b. The industrial commission.

c. Units of local, county, and state health departments.

5. A health program to include:

a. Health conservation by physical supervision and education.

b. Plant inspections to establish control over harmful exposures.

c. First aid and emergency care.

d. Proper reporting of all lost-time disability.

6. Adequate compensation of industrial health personnel. As this ideal goal is reached (and enormous impetus is accumulating under the pressure of war industry and in the expressions of influential people in the government, in industry, and in labor), we can begin to feel that the quality of industrial health supervision is approaching reasonable uniformity—the quantity only varying according to size of the plant. To hasten this end, the Council on Industrial Health has issued a series of pamphlets descriptive of medical service in industry which include such titles as:

1. "Outline of Procedure for Physicians in Industry." This is designed to acquaint the practicing physician with duties and relationships in industry—a most helpful and useful statement.

2. "The Industrial Medical Department." A brief description of how to go about setting up a plant dispensary.

3. "Plant Hygiene Studies." This emphasizes that no physician will make a real contribution unless he gets out in the plant and makes constructive suggestions about the prevention of harmful exposures, using necessary industrial hygiene consultation and study whenever necessary.

All these publications and others on various aspects of industrial health are available on request from the council office in Chicago or through your own state committee organization.

It is becoming plainer as time goes on that the present unprecedented mobilization of industrial resources—men, material, and machines—must include intensification of industrial health effort. The President has reminded all of us pointedly and forcefully that strikes and slowdowns are by no means the major causes of lowered industrial productivity. The greatest offender is the common cold. No modern nation engaged in military operations can afford loss of time by skilled and essential workers which existing medical knowledge can prevent. In this uncompromising fact lies the physician's obligation and opportunity to the worker, employer, and the whole war effort. We must find a way to expand professional interest into associated fields of industrial hygiene, medicine, and surgery. Failure can very logically lead to compulsory forms of industrial medical service as has occurred in Europe. Of all the constantly increasing demands on the time and ability of the medical profession caused by the enlargement of our armed forces, none offers the possibility of contributing more directly to the successful completion of this war as does industrial health, and in no similar field will coordinated effort bring richer rewards.

SOME FURTHER STUDIES ON TRIGONITIS*

HENRY L. DOUGLASS, M.D., CHARLES G. RANSOM, B.S., F.R.M.S., B. H. WEBSTER, M.D., Nashville

Two years ago one of us read before this society a paper on "Chronic Trigonitis: Its Effect on Trigonal Epithelium."[1] The program committee has again brought this subject before you in order to ascertain what changes, if any, have occurred in the concept of this very old lesion. The purpose of this paper is to initiate the discussion by presenting some observations both clinical and experimental which may explain the course the disease frequently follows.

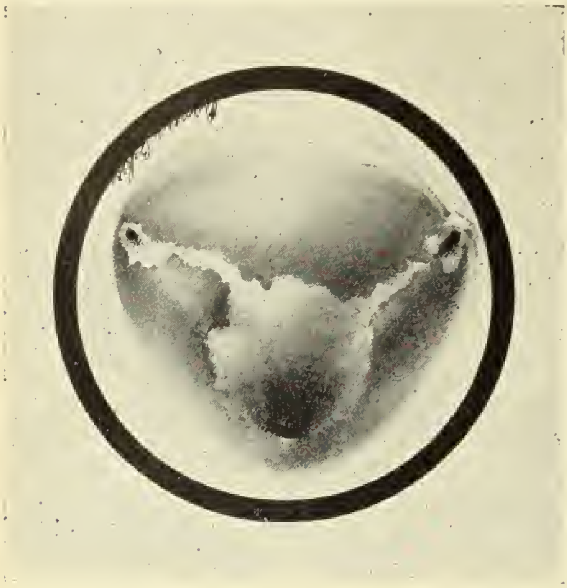

Fig. 1. This illustration shows the cystoscopic findings in one of these patients as the artist saw them through the cystoscope.

First of all, we list the more important results of clinical investigation of 143 women who were cystoscoped for the first time during 1941.

1. Trigonitis or urethritis occurred in 118 patients either alone or associated with other diseases of the urinary tract. It is by far the most frequent single finding.

2. Symptoms of trigonitis began at the average age of thirty-five years.

3. In the majority the first attack predisposed to others so that when first seen the average patient had followed a course characterized by exacerbations and remissions for seven years.

4. Although infection probably occurs in all cases of trigonitis at times, microscopically normal urine was found associated with symptoms at the first examination in forty-three patients.

TABLE I

A Summarized Analysis of the Urines of Forty-Three Patients That Were Microscopically Normal Except for Bacteria at First Examination

Reaction	*Sp. Gr.*	*Albumin*	*Sugar*	*Pus*	*R. B. C.*	*Casts*	*Bacteria*	*Positive Culture*
Acid 64.2%	1009 plus	6.9%	0	0	0	0	9.3%	20.9%
Alkaline 19%								
Neutral 16.6%								

During the past three years we have made many attempts to isolate a causative organism of this lesion in the patients with bladder symptoms whose urines were microscopically normal. The methods included anaerobic and aerobic bacterial cultures, chick embryo inoculations for a positive virus† as well as cultures for fungi. All of these proved to be negative in the selected cases.

The negative findings, together with the results of experiments which will be described, have led us to believe that sensitization is the only theory broad enough to explain these seemingly contradictory clinical findings.

Immunization with dead bacteria is the method which is most extensively practiced both in the experimental immunization of animals and in the vaccine treatment of man, both therapeutic and prophylactic. Pfeiffer was one of the first to introduce this procedure. Prophylactic vaccination against typhoid fever, cholera, dysentery, and many other diseases is now widely employed. Vaccines are antigens of the respective organisms, which stimulate the formation of antibodies by the host.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

†We are indebted to Dr. Roy C. Avery, Department of Pathology, Vanderbilt University, for the chick embryo inoculations as well as his collaboration in bacterial cultures.

In 1891 Koch[2] made the remarkable discovery that active tuberculosis in guinea pigs renders them extremely sensitive to extracts of old autolyzed glycerine broth cultures of the tubercle bacillus. He concluded that the active substance to which they become sensitive is a protein fraction of the bacterial cell and accordingly named it "tuberculin." This was probably the first time that hypersensitiveness to bacterial protein was observed.

Shwartzman[3] discovered that the culture filtrates of certain kinds of bacteria—e. g., E. typhosa, Escherichia coli, meningococci, streptococci, and a few other bacteria—contain what he designated as a skin preparatory and reacting factor, respectively. If a small amount of such a filtrate is injected into the skin of a rabbit, and twenty-four hours later an intravenous injection of the same or any other filtrate that contains the reacting factor is administered, there develops a severe hemorrhagic reaction at the site of the primary skin injection. In Shwartzman's opinion the phenomenon is due to local disturbances of cell functions produced by the filtrate.

It has been thought for some time that the alimentary canal is a frequent focus from which bacteria gain access to the urinary tract via the blood or lymph channels. An example‡ of this occurred in a man who was recently admitted to the Vanderbilt Hospital because of fever and pyuria. Cystoscopic studies showed that the patient had a colon bacillus infection of his left kidney and a normal right kidney. Blood cultures were positive for the same organism. This patient six months previously had a resection of a part of the intestinal tract for tumor.

Arnold[4] found that bacteria injected into the duodenum pass into the thoracic lymph duct only if an alkaline solution of egg white, or bile, was introduced simultaneously.

Some of these bacteria may occur in the urine over long periods without causing inflammation and may be considered nonpathogenic organisms. They are, however, a source of foreign protein, and should they in the course of time gain access to the tissues proper, the cells at the point of inoculation will develop immune substances. So long as these immune substances exist in that area, merely the presence there of the protein fraction of the bacteria, not the living organism, is sufficient to incite inflammation. Absorption from the colon of the degradation products of dead bacteria may be responsible for an inflammation in a localized area of immunized tissue.

This particular reaction is not broad enough to explain all inflammations which may occur in hypersensitive areas. If, under certain conditions, bacteria make their way through the intestinal mucosa into the blood stream to be excreted in the urine, it should be easier for much smaller particles such as protein molecules unaltered with respect to specificity. Gastrointestinal dysfunctions are frequently associated with inflammatory reactions in the urinary tract. Upon this hypothesis Ransom devised the following experiment:

Twelve patients were selected. After emptying the bladder, each patient was given a breakfast consisting of three raw eggs. Three urine specimens were collected at hourly intervals thereafter, and these urines were tested against the serum of rabbits which were highly sensitized to egg albumen. The results are shown in Table II.

TABLE II

Immunological Protein Reactions in Urine After Three Raw Eggs

Hours After Eggs	Cases and Reactions											
	1	2	3	4	5	6	7	8	9	10	11	12
1	1 plus	1 plus	0	Trace	0	0	0	0	0	0	0	0
2	Slight Trace	Trace	1 plus	Trace	Trace	Trace	0	0	0	0	Trace	0
3	0	0	Trace	Trace	1 plus	1 plus	0	Trace	0	0	Trace	0

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‡E. H. Barksdale: Personal communication.

One or more of the hourly specimens of urine in fifty-five per cent of the patients tested contained sufficient egg albumen to give a positive precipitin test with specifically immune rabbit sera. Egg albumen, therefore, may pass from the intestinal tract into the general circulation later to be excreted by the kidneys without losing the biological specificity. Thus, an opportunity is offered the tissues of the urinary tract to become sensitized to a foreign protein by both the circulatory and excretory systems.

CONTRIBUTORY FACTORS

1. *Localized Inflammation or Trauma.*—Burrows[5] relates experiments on the localization of foreign proteins, in which he states that since the normal plasma proteins escape through the capillary walls in inflammation it may be assumed that foreign proteins will follow the same course. Not only foreign proteins thus gain entrance to the extravascular regions, but under the influence of inflammation, they become retained there. In other words, if a foreign protein be introduced into the blood stream, it may become concentrated in any focus of inflammation that is present.

Menkin[6] sensitized a rabbit by repeated injections of horse serum, and nineteen days after the last injection he caused inflammation in one ear by holding it in water fifty-four degrees centigrade for five minutes; ten cubic centimeters of horse serum were now injected into the peritoneum, and twenty-four hours later the rabbit was bled to death under ether, and the ears were weighed, and separately sliced and ground up in equivalent amounts of saline. He then carried out precipitation tests on the extracts prepared from them and the results which he obtained are shown in his appended table.

Dilution of Skins Extract	Normal Ear	Inflamed Ear
1–3	+	++++
1–9	Trace	++
1–27	0	+
1–81	0	+
1–243	0	0

From this it will be seen that antigen was collected in greater concentration in the inflamed than in the normal ear.

In Burrows' text[7] on the localization of disease, he shows a number of colored plates demonstrating the segregation of a dye in areas which are inflamed from disease and another which had been previously irritated with chloroform.

These two plates are excellent illustrations of a foreign substance being concentrated in an inflamed area with no relation as to what caused the inflammation.

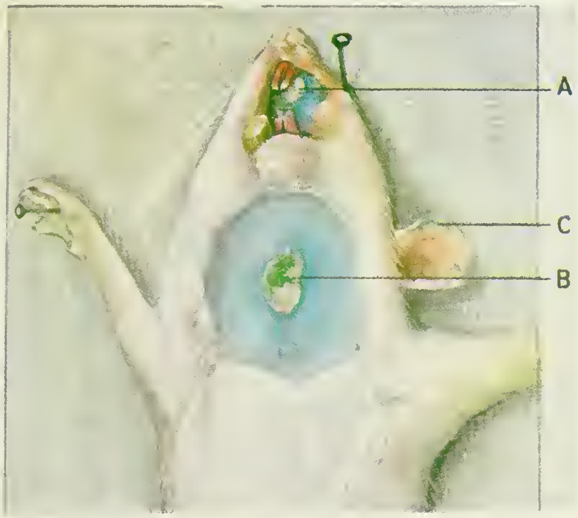
2. *Physiological Disturbances of the Gastrointestinal Tract.*—In another experiment three guinea pigs were inoculated five times intracutaneously with thirty per cent egg albumen. The injections were made at intervals for two weeks. The dose began with one-tenth cubic centimeter and was gradually increased to five-tenths cubic centimeter. On the twenty-fifth day after the first injection one drop of croton oil was given to the guinea pigs orally. No reaction occurred. Two days later one more drop of croton oil was given to each guinea pig, and twenty per cent egg albumen was put into their drinking water. Within twenty-four hours the sensitized areas in the skin showed a definite inflammatory area from two to three centimeters in diameter, and this time the temperature of each guinea pig was elevated to two to four degrees above normal. This reaction was repeated on three different occasions. Two sensitized guinea pigs were used as controls which took the croton oil, but no egg albumen was put into their drinking water, and they failed to show any skin reaction. This experiment, we think, shows that with slight gastrointestinal irritation we were able to bring about hypersensitive reactions as a result of the absorption of the egg albumen from the intestines.

A somewhat analogous reaction was observed in a patient who had been given several injections of bacillus escherichia coli vaccine. This organism had been cultured from the bladder urine. There had been little or no inflammatory reaction from the administration of the vaccine, but two or three days after her last dose she had a sudden exacerbation of bladder symptoms which was accompanied by a marked inflammatory reaction in the skin where the vaccine had been injected. The bladder

ILLUSTRATION NO. I

(This illustration and accompanying legend are reproduced from Burrows' text, Localization of Disease, by permission of the author.)

LOCALIZATION OF DYE IN AN ULCER, AN ABSCESS, AND IN NODULES OF SCABIES.

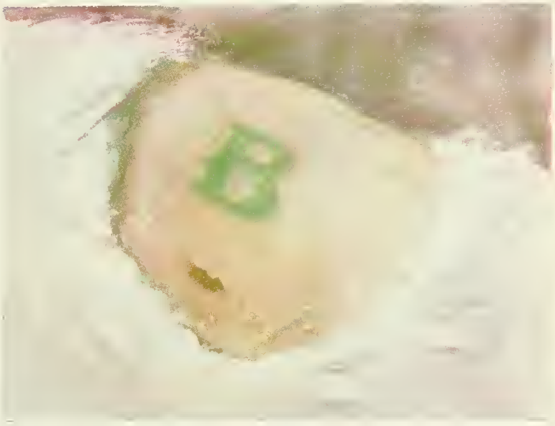


A rat with an ulcer of the palate, a secondary abscess in the neck, and nodules of scabies on the margin of the ear was given an intravenous injection of isamine blue. The dye has become concentrated in the ulcer (A), abscess (B), and in some nodules (C) caused by scabies in the margin of the ear.

ILLUSTRATION NO. II

(This illustration and accompanying legend are reproduced from Burrows' text, Localization of Disease, by permission of the author.)

LOCALIZATION OF DYE IN AN ARTIFICIAL WHEAL.



Isamine blue was injected into a rabbit's ear vein. Immediately afterwards a B-shaped wheal was raised in an epilated area of the animal's back. The dye has become localized with exactitude in the irritated area of the skin.

symptoms only lasted some eight hours, and as they diminished, there was a corresponding improvement of the inflammatory reactions in the area where the vaccine had been given. The protein products of these bacteria in her bladder had evidently made entrance into her blood stream and thereby produced the reaction in the recently sensitized skin area.

3. *Inheritance.*—It is rather obvious that inheritance may predispose tissues to develop immunity to foreign proteins.

It is well known that certain strains of animals of the same species are much easier to sensitize than others. This fact is utilized commercially in that horses are selected for the production of antitoxins on the basis of breeding.

Sherwood[8] states that heredity apparently influences the time of onset of hypersensitiveness. Those with a bilateral inheritance are all sensitive by the age of forty, thirty-six per cent being sensitive before the age of five, while the unilateral hypersensitive become sensitive as a rule at relatively later periods of life.

It is generally agreed that most of the bacteria found in the urinary tract are those of low toxicity which live harmlessly in the intestines. When these organisms are present in the urine, that portion of the bladder which is derived from the hind-gut seldom reacts to them, but the trigone and a narrow margin around the ureteral orifices which has a different embryological origin frequently becomes inflamed. Certainly all parts of the bladder wall must be equally in contact with an infected urine, and, therefore, equally exposed. Since the bladder proper and the colon are so closely related, it seems reasonable to suppose that evolution, through inheritance, has endowed them alike in their capacity to react under similar conditions. Bacteria which are to a large extent unable to sensitize the colon and therefore the bladder may be quite capable of inciting such reactions on the trigone.

DISCUSSION

Both the clinical course and the localization and character of the lesion in trigonitis are consistent with experimental findings in the field of immunology.

The experiments so far show that the blood may at times contain a wide variety of foreign proteins. Whether or not within certain limits this is normal is not known. There are indications, however, that disturbances in the physiology of the intestinal tract will increase the amount of foreign protein in the blood well above a limit which would be considered normal.

It is reasonable to suppose that when the trigone is repeatedly exposed to a foreign protein it will develop a state of hypersensitiveness. Foreign protein may be carried to the trigone by the blood or urine. Therefore, any damage to the capillary endothelium or the mucous membrane of the trigone will subject it to direct inoculation with any and all foreign proteins which may be present in the blood stream or urine at the time. Thus hypersensitivity to food may develop in an area which has been the seat of repeated bacterial infections.

In conclusion, we wish to express our thanks to Dr. Harold Burrows of London, for having sent us his original pictures for reproduction in this paper.

SUMMARY

1. We have reported 118 patients with inflammatory lesions of the urethra and trigone.

2. The disease developed at the average age of thirty-five years and had followed a course characterized by exacerbations and remissions for a period of seven years when first examined.

3. The urines were microscopically normal, except for bacteria in forty-three of these patients, when first examined, in spite of clinical symptoms.

4. Clinical and experimental data have been reported which indicate that the inciting factor in certain cases is one or more types of foreign protein, possibly intestinal in origin, to which the trigone has become hypersensitive.

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DISCUSSION

DR. GILBERT M. ROBERTS, JR. (Chattanooga): I think that the program committee should be congratulated for again bringing before this society Doctor Douglass and his coworkers to present some of their work on urethritis and trigonitis, and I think I express the feeling of all when I say that Doctor Douglass should be commended for presenting this phase of this condition so completely.

This condition of urethritis is the most common condition in the female which presents itself to the urologists, and in turn it is the urological disease seen most frequently by men doing general practice. In all probability a large percentage of the so-called cases of cystitis are in reality urethritis and trigonitis.

There are a lot of diseases in which the etiology is attributed to a sensitization by a bacteria rather than upon the bacteria themselves. As an example of this, there are some who think that non-mechanical appendicitis is instigated by this process; there are still a larger group who consider rheumatic fever, particularly some of the cardiac complications, to be the result of a reaction of the tissue to a previous bacterial sensitization.

As far as I know, this is the first time that this has been proposed as being the etiology of trigonitis and urethritis. I think undoubtedly that some cases have the origin of their symptoms due to an allergic response to a bacterial stimulus. For the most part, however, my explanation of the disease is along an entirely different line.

It has not been my experience, or the experience of Folsom, who has done considerable work on urethritis, to find that this disease is limited to women of middle age; on the contrary, it is my opinion that it is a disease of infancy, and it has been well proven by both Folsom and Spence that some eighty-five per cent of the cases of *clinical* pyelitis of infancy in females are not due to an infection of the upper urinary tract, but that the clinical syndrome is caused by an inflammation of the tissues of the deep urethra and that these tissues so affected are glands, and that the glands become infected during the diaper-wearing period, when, even in spite of the most meticulous care, particles of fecal matter are forced into the short urethras of the little girl babies. Applying this statement to the theory as proposed by Doctor Douglass, this could be the logical explanation of the introduction of the sensitizing bacteria, and then that the cases seen later in adult life are the reactions of the area involved to a new introduction of the same bacteria.

As a further effort for the determination of the etiology of this disease, it would be my suggestion to study some of the pathological specimens of the urethras obtained at autopsy. I have done this, and I know what one would find. In those cases who had the symptoms of urethritis during life one will find in the posterior urethra granulation tissue and sometimes papillary masses and will also find that the glands are filled to capacity with the products of their secretions. Frequently the papillary masses are quite edematous, and it is these edematous papillary masses which are so frequently called cysts by the cystoscopists, for that is exactly what they appear to be to the cystoscopic eye.

I wish to state that I have thoroughly enjoyed the presentation of this paper and again congratulate Doctor Douglass and his coworkers on the thoroughness of their work, and I thank the society for the privilege of this discussion.

DR. E. PARK NICELY (Knoxville): Trigonitis is excessively common, occurring in both sexes, but is far more frequent in women. In males and in young women it follows a urethral infection, while in older women it constitutes a clinical entity regardless of what associated conditions may be present.

These symptoms are those of an irritable bladder with attacks of urgency, frequency, and often tenesmus. Cystoscopic examination of the bladder reveals a mucosa which is congested, elevated, and hyperemic from the ureteric ridge downward to the internal sphincter. We must remember in the physiology of micturition that there is an elevation and contraction of the trigonal muscle which is located at the base of the bladder, is emptied not only on volition, but through suggestion and any emotional state.

The essayist has shown by his statistics in forty-three cases that only 20.9 per cent of his patients had a positive urine culture and 9.3 per cent had bacteria in the urine. He further states that these forty-three cases had a normal urine microscopically. We who are treating kidney and bladder diseases frequently have these patients referred to us for a diagnosis with a negative urine and all the symptoms of trigonitis. A careful history may reveal that this patient has once had a severe cystitis and has never completely recovered. The author wishes to drive home the fact that foreign proteins in some form over a period of time will give an inflammatory change in the trigonal mucosa. This condition is quickly manifested and noticed in mucous membranes and the skin, but due to the location of the bladder we are seldom aware of its presence.

We know that the kidneys drain the pelvic organs and the intestinal tract through lymph and blood supply. Therefore, any bacteria or toxin which may come from a diseased cervix, fallopian tube, or intestinal tract will pass through the kidney and down to the bladder and affect its most dependent part. These bacteria may be nonpathogenic, but when they reach a new field which may already be inflamed will cause a chronic irritation.

Trigonitis is a subject that has been much discussed, and we have not yet been very successful in determining the etiological factors, and our results have not been so good. The essayist today has approached this difficult subject from an immunological approach, and it must be given consideration in genitourinary disease as in any other diseases of the body.

There is a distinct possibility that food allergy may cause this foreign protein reaction in the urinary bladder and trigone, as it has long been recognized as causing untoward reactions in other organs of the body. It has been a common practice in pediatrics for many years that a child under one year of age be not allowed egg albumen for fear the baby may become sensitized to egg white. It is reasonable to believe that the trigone may become the shock organ in such sensitization just as easily as a respiratory tree or intestinal tract.

There is also a possibility that inhalants as well as foods and bacteria may cause such reactions. One of our outstanding men at the Southeastern urological meeting recently reported a case of urethritis following the use of tobacco which contained menthol. The patient immediately improved after discontinuing the use of the cigarette. Ferguson, working with patients from anilin dye factories, is of the opinion that inhalations of the alpha and beta naphthylamine, which reach the bladder by way of the blood stream, cause tumors in the bladder.

It is not absolutely necessary that the protein pass into the circulatory system unchanged. These substances may combine with other body proteins and form an entirely new protein compound known as the "haptens," and these new compounds will be so closely related to cause the tuberculinlike reaction that Doctor Douglass has discussed today. Furthermore, the substance taken need not necessarily be a protein. Landsteiner has shown conclusively that nonprotein substances such as glucosides and drugs may form haptens and will, therefore, give a proteinlike reaction. There is a question of whether or not the croton oil given to the rabbits caused the membranes of the intestinal tract, through irritation, to be more permeable to the egg albumin or whether a hapten was formed by the egg albumin and oil, forming a new compound to which the normal mucous membrane was permeable.

Burky has shown that it is impossible for the human body to become sensitized to proteins in the lens of the eye unless staphylococcus toxin is present. There may be some relationship between this and the action of the toxins or degenerative substance on the proteins of bacteria in the urine.

It would have been very interesting if the essayist could have reported today on the histological examination of his experimental specimens. We would have been able to have determined whether or not this was an allergic type of reaction or whether it was entirely inflammatory by the type of infiltrating cell.

There is no doubt but what a cystocele following childbirth causes the bladder to become more prone to trigonitis because of the poor drainage of the bladder. These conditions should be repaired.

It is our hope that this excellent work reviewed today will stimulate us toward a more conclusive work along this line, and I am convinced that Doctor Douglass and his coworkers are approaching this field in a very scientific manner, and I for one am most interested.

I wish to congratulate Doctors Douglass, Ransom, and Webster for this interesting treatise on trigonitis.

OBSTRUCTIVE LESIONS OF THE LEFT COLON: DIAGNOSIS AND TREATMENT*

R. L. SANDERS, M.D., Memphis

The present discussion will deal solely with carcinoma, this being the most common obstructive lesion of the left half of the colon and the only one in which resection, if feasible at all, is invariably indicated.

In any consideration of malignant lesions of the colon, it should be borne in mind that, from the standpoint of embryology, anatomy, and physiology, the right and left portions of the organ are quite distinct. The right half is derived from the mid-gut, the left from the hind-gut. On the right, the lumen is large, the walls thin and permeable, the contents liquid, the function absorption. On the left, the lumen is smaller, the walls relatively thick and muscular, the contents more solid, and the function storage. Further, carcinomas on the right and left differ, generally speaking, in their pathologic characteristics. Those on the right tend toward the cellular, fungating type, which protrude into the lumen, whereas those on the left are usually of the scirrhous type, which encircle and constrict the colon wall. The symptoms of carcinoma of the left colon, therefore, are primarily those of obstruction.

In a goodly number of cases, the obstruction becomes acute before the patient is sufficiently concerned to consult a physician. A sudden onset and rapid increase of abdominal distention is usually the paramount clinical feature. Pain of a griping or cramping nature may be associated, and perhaps nausea and vomiting as well. As a rule, the patient makes every effort to reduce the distention by purgatives and enemas, but without success, and when brought to the surgeon is found to be enormously distended.

The diagnosis may be exceedingly difficult, especially the differentiation from ileus. The administration of barium by mouth or by enema for roentgenographic purposes is to be avoided because of the danger of perforation. Further, barium cannot pass through the point of obstruction and is difficult to recover through the colostomy. Plain films should be made, however, to determine whether the distention is in the small or large intestine; in these cases, the film will show the colon to be distended above the obstruction, though there will be little, if any, change in the pattern of the small bowel. One will have to surmise from the age of the patient and the history that the obstruction is produced by a malignancy. A history of constipation over a period of years, and recently increased difficulty, with some alteration in the stool and perhaps the passage of blood and mucus, is usually obtained. Frequently, one or more similar attacks of distention, which subsided spontaneously or following purgation, is reported.

The immediate problem in these cases is relief of the obstruction. If possible, this is accomplished prior to operation by decompression of the bowel by suction through the indwelling tube, according to the Wangensteen principle. Generally, however, it is necessary to do a cecostomy or transverse colostomy and irrigate the bowel until all obstructive manifestations disappear and the patient can be prepared for exploration and operation. It is to be borne in mind that, when a cecostomy is done, no attempt should be made to explore the abdomen to determine the cause of the obstruction. The bowel might escape from the abdominal cavity and resist every effort at reduction, or one might produce a rupture and spread metastases or infection by even the gentlest handling.

If the roentgenogram or sigmoidoscope demonstrates the growth after proper rehabilitation of the patient, which usually requires ten to fourteen days, one may proceed with the type of operation which seems best. This may be resection of the diseased segment with end-to-end anastomosis, followed later by closure of the cecostomy, or it may be a Mikulicz operation in the original form or one of its modifications. In our opinion, the latter methods are the more desirable when possible. Or, if the lesion is sufficiently near the rectosigmoid juncture, an abdominoperineal resection, preferably in one stage, may be carried out.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

The following five cases are reported to illustrate, first, the salient clinical features of obstructive lesions of the left colon, and second, a changed conception of the management of these lesions within recent years.

Case I.—E. N. S., male, age fifty-six years, was admitted to the hospital because of abdominal distention associated with pain, nausea, and vomiting. His physician had made a diagnosis of intestinal obstruction, and every effort had been made to reduce the distention, but to no avail. Three weeks earlier, he had had a similar attack, which was relieved by a purgative. A previous history of chronic constipation, more pronounced within recent months, was reported.

On examination, the colon was greatly distended, so that no mass could be detected. A plain film showed a gaseous distention of the colon and, to a slight extent, of the small bowel; the picture, however, was not that of ileus. The diagnosis was obstruction of the colon from a growth, probably malignant.

Exploration was carried out through a paramedian incision. In the middle of the sigmoid there was a firm, napkin ring carcinoma, producing complete obstruction and consequent distention of both the colon and small intestine. Several of the mesenteric glands were enlarged, but the liver was apparently free of metastases.

Because of the enormous distention and acute obstruction, a transverse colostomy was considered unwise. A cecostomy was, therefore, done through a McBurney incision and a catheter inserted. The paramedian incision was closed.

Despite abundant drainage, the distention began to increase on the third day and was accompanied by symptoms of peritonitis. After insertion of the stomach tube, however, this condition gradually subsided.

The second stage of the operation was undertaken five weeks after the first, the colon meanwhile having been reduced and restored to good condition. Through a low midline incision, the vessels were ligated, the gland-bearing area incised, and the sigmoid elevated. Being of ample length for a Mikulicz operation, the bowel was sutured together several inches above and below the growth, drawn outside, clamped with a Rankin clamp, and resected, according to the obstructive method. Amfetin was poured into the peritoneal cavity and sulfanilamide into the wound before closure. The patient's convalescence was satisfactory; both the cecostomy and colostomy functioned well. Eleven days later, clamps were applied to the spur, and three weeks thereafter the colostomy was closed by the delayed method. When the continuity of the bowel was established, two weeks later, the cecostomy was closed. Recovery was uneventful. It has now been three years since the operation; the patient has remained well and has been working every day.

Pathologic study of the specimen showed the lesion to be an adenocarcinoma with extension to the mesenteric glands.

Comment.—This patient was improperly treated. The abdominal exploration caused spread of the infection and created a peritonitis, despite gentle handling of the growth. With added experience we are inclined to do a simple cecostomy and nothing more as a preliminary step in such cases, and to complete the resection in stages at a later date, when the condition of the patient is more favorable.

Case II.—Mrs. B. E. S., age sixty-four years, was first seen during an attack of generalized abdominal pain, associated with distention, nausea, and vomiting of five days' duration. She gave a history of having had a hemorrhage from the bowel eight months previously, and of having been constipated since that time. She had also lost several pounds in weight. Her gall bladder and appendix had been previously removed.

Aside from an abdominal distention, which prevented palpation of a mass, the physical examination was negative. A plain film of the abdomen, however, demonstrated an enormous enlargement of the colon. The small bowel was practically normal. The diagnosis was obstructive carcinoma of the sigmoid.

The abdomen was explored through a low midline incision. There was a firm, napkin ring carcinoma in the lower sigmoid, producing complete obstruction, a few enlarged glands in the mesentery, and a small nodule in each lobe of the liver. Since the metastasis appeared to be fairly early, and believing her life could be prolonged a year or more, resection was considered worth while. A three-stage procedure with end-to-end anastomosis was decided upon, the distal segment being too short for a Mikulicz operation. The low midline incision was closed.

An incision was then made in the upper midline and a temporary colostomy created in the transverse colon. Function of the colostomy was satisfactory, and the patient's convalescence was smooth.

Seven weeks later, the abdomen was reopened through the low midline scar, the sigmoid was freed, and the growth was found approximately six inches above the peritoneal reflexion. A segment, including the tumor and several inches of normal bowel proximal and distal thereto, was clamped between Furniss clamps and removed, together with the adjacent gland-bearing area of the mesentery. The two ends of the colon were sufficiently free to permit end-to-end anastomosis without tension. The raw surfaces were then peritonized, amfetin was poured into the peritoneal cavity and sulfanilamide into the wound, and the abdomen was closed.

Clamps were applied to the spur of the transverse colostomy four weeks later, and when cut down sufficiently low, the colostomy was closed. Both wounds healed by primary union, and the patient was dismissed from the hospital fifteen days after the final stage of the operation. Thus far, nine months after the resection, her bowel function has been normal and her course otherwise excellent.

The pathologist reported the growth to be an adenocarcinoma.

Comment.—The history and findings in this case justified a diagnosis of an obstructive lesion of the left colon. In the light of our present knowledge, this patient also was improperly treated, in that a midline incision was made and the patient explored at the risk of spreading infection, rupturing the bowel, or evisceration. Although no particular harm was done, a primary cecostomy followed by resection after the patient had been adequately prepared would have been the safer procedure.

Case III.—Mrs. D. C., age fifty-seven years, was seen in consultation after admission to the hospital because of abdominal distention, which had begun ten days before and had constantly increased, despite enemas and purgatives taken by the patient at home, and medical treatment given since she entered the hospital. She had no other complaint. She gave a history of constipation over a period of several years and an increasing difficulty within recent months.

The abdomen was markedly enlarged and tympanitic, and a mass could not be palpated. A plain film revealed an enormous distention of the colon, though the small bowel pattern was unchanged. Believing that she had an obstructive malignancy on the left, a cecostomy to decompress the bowel was advised.

On exposure through a McBurney incision, the cecum was found to be enormously distended with gas and fluid contents. It was therefore brought out through the peritoneum for a distance of two and one-half inches, the peritoneum was sutured to it all around, and a tube inserted for drainage. Irrigations were carried out at frequent intervals over a period of ten days; by the end of that time, the deflation was complete and the colon was in safe condition for exploration. This was carried out through a low midline incision.

A constricting lesion was found in the middle of the sigmoid and a few enlarged glands in the mesentery. No masses could be palpated in the liver. The growth being easily resectable by the Mikulicz procedure, the peritoneum was split on the two sides and pushed down, the vessels around the adjacent gland-bearing zone were ligated, and the mesentery was freed in wedge-shaped fashion. The bowel was then sutured together to form a loop, the Rankin clamp applied eight inches above the growth and three inches below, and the loop excised with the cautery, as an obstructive resection. Amfetin was poured into the peritoneal cavity and sulfanilamide placed in the wound about the loops of bowel. The clamps were removed on the third day. A few days later clamps were applied to the spur; when the division of the spur was sufficiently low, the colostomy was closed by the delayed method. After the continuity of the bowel was established, as evidenced by through-and-through irrigation, the cecostomy was closed, also by the delayed method. The wound healed by primary union, and function of the bowel soon returned to normal. It has been only six months since the operation, but the patient is perfectly well and is performing her household duties. The prognosis is believed to be good.

The pathologist's report stated that the lesion was a grade four papillary adenocarcinoma.

Comment.—The enormous distention of the abdomen in a patient of late middle age and the previous history of increasing constipation were sufficient to justify a diagnosis of an obstructive lesion of the left colon. A primary cecostomy was done, the colon decompressed, and the patient restored to proper condition before exploration was carried out to determine the nature of the disease. A midline incision and exploration as the primary operation would probably have been disastrous. This case is presented to illustrate the correct method of treatment of obstructive carcinomas in this region. The same course should have been followed in the preceding two cases.

Case IV.—S. A., male, age forty-three years, was seen in consultation after his admission to the hospital on a diagnosis of recurrent appendicitis and left inguinal hernia. On further investigation, however, it was revealed that he had had attacks of a griping type of abdominal pain for approximately eight months, suggesting an obstructive lesion. An exploration was advised.

When the abdomen was opened through a low midline incision, a large, firm, napkin-ring carcinoma was found encircling the lower sigmoid. There were also several enlarged glands along the mesentery up to the brim of the pelvis. No metastases could be palpated in the liver. It was decided to do a combined abdominoperineal resection in two stages.

The sigmoid was divided in its upper portion and the proximal loop brought out through a small left McBurney incision to form a permanent single barrel colostomy. The lower loop was invaginated and dropped back into the abdomen. The space to the left of the colostomy was closed to prevent the small bowel from slipping down and producing obstruction. Exploration also revealed a moderately-diseased appendix and a left inguinal hernia; the appendix was removed. The wound was closed without drainage.

The second stage was carried out four weeks later through the former low midline incision. The descending loop was freed, the inferior mesenteric artery ligated, the gland-bearing zone resected, the bowel pushed down into the hollow of the sacrum, and a pelvic diaphragm created. The abdomen was then closed and the posterior resection done. Three cigaret drains and a loose packing of gauze were placed into the wound.

The patient had considerable gaseous distention and developed a mild peritonitis a few days postoperatively; this soon subsided, however, and his recovery was smooth thereafter. He left the hospital at the end of four weeks. Since that time the colostomy has continued to function well, he has gained forty pounds in weight, and has been working daily. Three years have elapsed since the operation, and there is still no evidence of recurrence.

The pathologic report on the specimen was adenocarcinoma with metastases to the regional glands.

Comment.—This patient had been examined by a competent internist, and a diagnosis of chronic appendicitis and left inguinal hernia had been made. On going into the history more searchingly, however, the pain was found to be of a griping nature, such as is produced by an obstructive lesion of the colon. The abdomen was explored without further study, and the true nature of the condition was observed. It was then necessary to do a combined abdominoperineal resection and establish a colostomy without the knowledge or consent of the patient. This is another illustration of the importance of a careful history and thorough physical and roentgenologic study in the presence of recurrent abdominal pain with the idea in mind of a possible malignant lesion of the colon.

Case V.—Mrs. J. T. M., age forty-six years, consulted us because of recurrent and increasingly severe attacks of pain in the right lower abdomen. She had also had paroxysms of epigastric pain, for which no cause could be found except an asthmatic condition. In addition, she gave a history of qualitative food dyspepsia and one attack which her physician had attributed to a diseased gall bladder. In the course of the questioning she stated that bowel movements were likewise associated with abdominal pain, though she had never been particularly constipated and had not passed any blood.

Roentgenologic studies revealed an asthmatic type of lungs, an essentially normal gall-bladder function, an enlarged appendix, some delay in emptying at the terminal ileum, and a spastic colon. Unfortunately, a barium enema was not given, and the colon study was not completed. The diagnosis was recurrent appendicitis and probably cholecystitis.

Through an upper incision, the gall bladder was found to be only slightly diseased and the appendix moderately so; the latter was removed. On further exploration, a large obstructing carcinoma was discovered at the rectosigmoid juncture. There were also some enlarged glands in the mesentery, but no metastases in the liver or elsewhere. It was decided to close the upper incision and resect the rectum and upper sigmoid in one stage by the abdominoperineal method.

A low midline incision was therefore made, the sigmoid freed, and the upper portion brought out through a small left McBurney incision as a permanent single-barrel colostomy. The lower segment was closed and, after freeing the gland-bearing area of the mesentery and ligating the vessels, was dropped down into the hollow of the sacrum. A pelvic diaphragm was then created and the abdominal wound closed without drainage, 100 cubic centimeters of amfetin having first been poured into the pelvic cavity. The patient's position was changed, an elliptical incision made about the anus, and the posterior resection completed. Her convalescence was uneventful.

A few weeks ago she returned, complaining of intermittent abdominal pain. On examination, it was found that the colostomy had contracted and was too small for passage of the bowel contents. The opening was widened by a plastic operation, the colon was evacuated, and healing proceeded satisfactorily. Subsequent function of the colostomy has been excellent. With the exception of this incident, the patient has had no difficulty and has been leading an active life since the resection, now eighteen months ago.

Comment.—This case illustrates the necessity for a thorough study of all patients who complain of intermittent attacks of abdominal pain. The examination was complete with the exception of sigmoidoscopy and a roentgenogram of the left colon, which proved to be the most important part of the study. The principal trouble, therefore, was not suspected until the abdomen was explored, and it was necessary to resect the colon and make a colostomy without adequate preparation of the patient and without her knowledge or consent. Had the case been more carefully investigated, the end result probably would not have been different; nevertheless, we would have had the satisfaction of making a diagnosis prior to the operation.

The primary purpose of this paper is to call attention to some of the measures of safety in the management of patients with obstructive lesions of the left colon.

It will have been observed that in these cases we have employed a delayed method of closing the abdominal wall following closure of the colostomy. After suturing the peritoneal cavity, silkworm is inserted through and through the edges of the incision and left untied. The wound is packed with antiseptic gauze, and forty-eight hours later the packing is removed and the sutures tied. In an experience covering several years, we have found that primary healing takes place almost invariably.

Another safety feature is the local use of sulfonamide drugs. It is our custom to introduce fifteen grams or more of sulfanilamide or sulfathiazole powder into both the peritoneal cavity and the incision and, after abdominoperineal resections, into the posterior wound as well. The drug apparently is harmless in this amount, infection is minimized, and healing is facilitated.

Especially do we wish to emphasize the necessity for decompression of the bowel as the first stage of the resection. In the presence of extreme abdominal distention, this should be done by means of a simple cecostomy. No attempt should be made to explore the abdomen until the colon has been deflated and the patient amply fortified to withstand resection. Too many lives have been sacrificed through the surgeon's eagerness to determine the cause of the obstruction. By restraining one's curiosity in the interest of the patient until an investigation and operation may be safely undertaken, one will find that, other things being equal, mortality will be lower, complications fewer, and convalescence shorter and smoother.

DISCUSSION

DR. JOHN L. JELKS (Memphis): Mr. Chairman and Gentlemen: I just want to make this observation. When I think of surgery of the colon thirty years ago and of today, I am reminded of a Latin phrase: *ars longa, vita brevis.* I remember witnessing an operation in 1903 by our beloved great surgeon, John B. Deaver, who died of a carcinoma. He was operating on a left-side obstruction of the colon. He had called me down to the table. When he had finished that beautiful technic so rapidly executed, I asked him: "Doctor Deaver, what chance has your patient?"

"None in the world, Jelks, but the family and friends expect you to do something to try to save a life."

Years afterwards I resected a similar colon in a man fifty-three years of age, and the question was asked me by a preacher who brought the man over from Arkansas: "Doctor Jelks, what is your patient's chance?"

I said: "In the language of the great John B. Deaver, none in the world, but, preacher, you go and pray, and pray hard." He must have done so, for that man got well without any trouble at all, and I showed the specimen of the gangrenous colon, about a foot of it, at our local medical society. Gentlemen, that was to me a very marvelous exception to the rule. Yes, in the language of John B. Deaver, then they all died; today, surgery of the colon in the hands of an able surgeon such as Doctor Sanders is still very dangerous, but about fifty per cent of them you hope to save from a cancer death.

DR. A. M. PATTERSON (Chattanooga): I have been very favorably impressed with the whole program of this meeting. I was on the program committee to get this up, and I think that I can truthfully say, after making inquiry among a great many men who have listened to these papers, that our meeting here in Memphis this year has had the best-prepared group of papers that I have had the pleasure of hearing at one of our state meetings. I have been impressed with the preparation of the papers, the lack of talking at random, and, with the exception of the present discussion, I think that our discussions of the papers have been well prepared.

I particularly enjoyed Doctor Sanders' presentation, and I would like to ask Doctor Sanders in closing if he has had the opportunity of following through some of the work with the use of sulfaguanidine in preparing these resections, speaking of the case that is not obstructed or the case in which the obstruction has been relieved with cecostomy.

I would like also for Doctor Sanders to express an opinion on the operability of a rectosigmoid growth, in which at exploration you find enlarged nodes up the aortic chain with the possibility of several little nodules in the liver. You know you are not going to cure the patient, but it is a clinical proposition of whether it is practical to do the secondary stage to relieve local symptoms. I have one patient in mind in whom we did the first stage of the laparoperineotomy, found several nodules in the liver, and decided it was hopeless, and that patient lived for about three years before the nodules in the liver asserted themselves, and in the meantime she had a great deal of pelvic discomfort and finally died from secondary abscesses in the pelvis. What is Doctor Sanders' policy in resecting purely for palliative reasons?

DR. R. L. SANDERS (closing): First, let me reply to Doctor Jelks' statement that the mortality is approximately fifty per cent following resections of the colon for obstructive carcinoma. Formerly, a fifty per cent mortality was not uncommon. Today, however, the surgeon who is experienced in colon work should not have a mortality exceeding ten per cent, provided the patient is adequately prepared and the operation is carried out in stages as I have outlined. Our operative mortality within the past six years has been five per cent.

As to the prognosis, we have several patients who are still living from four to ten years following operation. In these cases, of course, the metastasis was confined to the adjacent glands and the growth and glands could be removed in toto. The length of life is, as we all know, directly proportional to the extent of the disease process and the completeness of the resection.

Our attitude regarding those cases wherein metastasis is found in the liver was brought out in the fourth case presented in the paper, which was not discussed for lack of time. From our experience, if the metastasis in the liver is not extensive, removal of the growth and release of the obstruction may be expected to give these patients an added year or more of life, other things being equal. We feel that this is well worth while, provided the mortality can be held within a reasonable limit.

In answer to Doctor Patterson's question as to our experience with the sulfonamide drugs, we have not tried sulfaguanidine, but have used sulfanilamide and sulfathiazole extensively. It is our custom to administer the drug both three or four days before operation as a preparatory measure, and also in the wound as outlined in the paper. We consider these preparations definite adjuncts to the surgical treatment of carcinoma of the colon.

ABDOMINAL SYMPTOMS NOT DUE TO ABDOMINAL DISEASE*

W. H. WITT, M.D., Nashville

The abdomen is that part of our anatomy of which as human beings we are most conscious. In a general way, one can meander through the vale of life and have very little consciousness of the fact that he has arms or legs—or even a head, if he does not have to comb his hair, shave himself, or trim his moustache. But the belly—there is an area that is constantly saying, "Help me, Cassius, or I sink." Between the ensiform above and the pubes below a multitude of symptoms congregate that spell misery for the subject of them and give the doctor what is probably his widest field for study and his best opportunity to make a big mistake. It would appear that in as much as in that area are situated the liver, spleen, gall bladder, stomach, small intestine, the large intestine, the appendix, the kidneys, pancreas, lymph nodes, and the pelvic organs, all other organs when they wish to cry out would let the abdomen alone, but not so; and it is my purpose to make some rambling remarks about what we may call abdominal symptoms without organic disease of those organs, and also to call attention to abdominal symptoms arising out of organic disease in other parts of the body. As for myself, I believe that all symptoms, no matter where noted, are based on some organic alteration of tissue. The alteration, however, may be so slight that it is not legitimate to call it a disease. Some of these days an organic basis will be shown to lie at the bottom of dementia praecox and manic-depressive states just as for appendicitis or peptic ulcer.

What symptoms may, legitimately, be called *"abdominal symptoms"?* We naturally think of nausea, vomiting, belching, flatulence, diarrhea, sense of peristaltic unrest as essentially abdominal symptoms. We may also, and very legitimately, include great hunger or loss of appetite. Pain, of course, is felt—as in all parts of the body. Suppose we consider pain first, as this, after all, is the symptom that may have the most meaning—associated, as it so often is, with tragic events in this area. It would be nice if the pain experienced in the different pathological states of abdominal organs adhered always to a definite pattern. The fact is, it does usually so adhere. The pain of peptic ulcer, gall-bladder disease, appendicitis, intestinal obstruction, ulcerative processes of the bowels, kidney stone, inflammation of the pelvic organs all present fairly consistent characteristics so much so that a careful history and careful physical examination will usually lead one to a correct conclusion. And let us remember that the words careful history and careful physical examination are to be taken at their full value and on their execution may hang life itself.

First, what are the extra-abdominal sources of abdominal pain? And how are we going to differentiate the pain of extra-abdominal origin from that of abdominal origin? The sources are chiefly the pleura, the heart, pericardium, the spinal cord and the spinal column, and the kidneys and ureters. Pain of pleural, cardiac, or pericardial origin is very commonly felt in the epigastrium or at least rather high up in the abdomen, although I have seen a coronary thrombosis in which the pain was in the appendix area. If the pain is worse on taking a deep breath, cough, or has other respiratory features, one is on his guard for the detection of the pleural origin. And these include not merely pneumonia, pleurisy, including diaphragmatic pleurisy, but take in the rarer thoracic accidents such as pulmonary collapse and spontaneous pneumothorax. In both of these latter conditions the pain may be largely abdominal, and both may be found more often if we are on the lookout for them, for they are not uncommon. How closely the epigastric pain of coronary thrombosis may simulate gallstone colic has been impressed on us for many years; the fact that both are apt to come on in the night, and often associated with belching, which gives some relief in both conditions, makes the differentiation none too easy. However, there are usually other symptoms and signs associated that help us to a conclusion, and the right conclusion is very important. I shall not dwell on this origin of epigastric pain, our literature is full of it, rightly urging its careful study. The history, present and past, must be thoroughly gone into.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

The pain of pericarditis may be felt only in the epigastrium. I think this occurs more often in children, and the respiratory discomfort and the pericardial rub lead us aright. Posture at times suggests a thoracic origin of pain.

In the cases of spontaneous pneumothorax and those of massive collapse of the lung with abdominal symptoms, a careful examination of the thorax should usually clear up the doubt—if not, the X-ray will do it for you. The main thing is, of course, to suspect thoracic disease as the cause of the abdominal symptoms. And there is usually something about the very appearance and posture of the patient to suggest such an origin. In one—pneumothorax—the liver or spleen is apt to be displaced downward, further directing one's attention to the abdomen rather than the thorax. The respiratory rate must be noted, but we must not forget that in certain abdominal accidents respiration may be definitely increased or in some way modified.

Bear in mind also that particularly in children a lobar pneumonia may suggest abdominal rather than thoracic disease. Appendicitis has been diagnosed many times because the pleural pain of a right-side pneumonia was referred to the abdomen and in addition muscular spasm may be quite marked. The sequence of clinical facts may be your best guide. In appendicitis the pain is apt to occur first. In pneumonia there is apt to be fever, rapid respiration, or other signs of illness before the pain is complained of, or the right abdomen becomes rigid and sensitive. The difficulty is further accentuated by the fact that in pneumonia of children the physical signs are late in showing up and there may be no cough.

Briefly then, there are at least five chest conditions, the symptoms and signs of which may direct one's attention to the abdomen rather than the chest—pericarditis and pneumonia of children—the pneumothorax, pulmonary collapse, and coronary thrombosis of adults. And all are common enough to justify these warnings.

Other origins of pain felt in the abdomen lie in the spinal column and the spinal cord. I take it that Pott's disease of the spine is now so rare that those oversights that our teachers called our attention to forty years ago are negligible now, but there are plenty of malignant metastases in the spine, plenty of spinal cord tumors, the pains of which are referred to the abdomen to keep us alert along this line. We must remember too that herpes (shingles) may give pain for from two to five days, severe pain, too, before there is an eruption. In such case probably kidney stone is more often thought of than any other abdominal pathology. Here also we may mention the gastric crises of tabes. These interesting storms are associated with sudden and severe epigastric pain, vomiting, and prostration. The attack itself probably suggests gallstone colic or visceral perforation more than anything else, and it is perfectly easy to resort to exploration unless the proper diagnosis is made. A history of previous attacks with no symptoms in the interim gives a hint—the pupil and absent knee jerk do the rest. Curiously enough some of these have gallstones. This at least serves to defend operation. In 1926 Weltman of the Mayo Clinic called attention to the fact that of 120 cases of gastric crises of tabes thirty-one had been subjected to useless abdominal operations.

An important abdominal symptom due to extra-abdominal disease is vomiting. Probably brain tumor and uremia are the most common organic causes. Each can usually be diagnosed by a careful physical examination and the proper laboratory tests. It is not so well accepted that after a cerebral accident, even a mild one, abdominal symptoms may quite overshadow the mental symptoms or those due to mild and transient hemiplegia. The age of such of these hemiplegias as begin to dwell on digestive symptoms naturally suggests organic pathology in the gastrointestinal tract, and they must be studied with that in view, but their development after such a cerebral accident should first suggest such an origin. Attempts have been made, and with definite progress, to locate a special area in the brain that has a direct organic and functional relation to the vagal and sympathetic tracts further down. And these are the tracts that have their most extensive distribution throughout the abdominal organs, an upsetment of which can give a great variety of symptoms in that field, and these include pain as well as nausea and peristaltic unrest. Alvarez of the Mayo Clinic has particularly called attention to this sequence of events.

So much for abdominal symptoms due to disease outside of that area. Now let us take up certain abdominal symptoms not due to organic pathology anywhere. I shall take this up under the general title of nervous indigestion—using these words in a rather loose way—meaning only that the symptoms discussed are not traceable to gross disease. As said before, it is my conception that all symptoms arise from physical causes, but such causes can hardly, in many instances, be regarded as disease.

As to definition, it is probably fair to say that nervous indigestion, nervous dyspepsia, is that form of digestive discomfort for which, if autopsy could be held, no organic changes could be found in the stomach or bowel or such organs as the heart, kidney, liver, gall bladder, appendix, blood, or other organ whose pathological states very commonly and rightly lead to digestive disturbance. There might be some disagreement as to whether the symptoms of certain functional deviations as hypochlorhydria, hyperchlorhydria, achylia, if they do have symptoms, may fairly well be included in nervous indigestion. In a sense this also applies to pylorospasm, cardiospasm, etc. It is also well to bear in mind that what today appears to be a symptom complex without organic basis may prove later to be otherwise. The history of medicine is replete with instances of this kind, and the great Ewald, from whom we have both a breakfast and a meal and who ranked at the front in gastroenterology in his day, is credited with assigning the clear-cut picture of duodenal ulcer to the list of nervous manifestations. He seems to have enjoyed poking fun at the sufferers from ulcer for foolishly eating something in the middle of the night to relieve the pain of emptiness. And all of us are finding it difficult or impossible to properly evaluate the relation of chronic cholecystitis or a chronic appendix to dyspepsia. Many patients are, no doubt, being treated as nervous dyspeptics whose symptoms really arise from one or the other of these conditions; and on the other hand probably a few gall bladders and appendices are being subtracted from patients whose symptoms are purely functional.

In its mildest manifestations dyspepsia involves a sense of epigastric fullness, distention, flatulence, leading, if circumstances permit, to some relaxation of such restraint as is imposed by buttons or buckles—a procedure the great joy of which is known to all men. I take it that everybody is at times troubled with such mild evidences that the stomach or something is in feeble rebellion. Too large a meal, too much fat or sweets, hasty feeding with poor mastication, eating when depressed or fatigued are followed by these gentle reminders in people who are otherwise healthy. It is only the continuation of such symptoms and under conditions not normally provoking them that they come to have any significance and lead the sufferer to his doctor.

Other symptoms of severer grade and giving more distress are belching of food, pain—mild or severe, sense of unrest, of gnawing or burning or emptiness, nausea, vomiting. Under certain circumstances, loss of appetite may be classed as an important symptom, as may be a bad taste in the mouth. The above symptoms—a few or indeed all of them—possibly may be present whether the patient has a serious disease as a carcinoma or has nothing of organic nature. It is the association and the sequence of symptoms, not the symptoms themselves, that count.

I shall assume that there is a purely nervous dyspepsia, indigestion, or whatever you wish to call it, and I believe that there is a fairly dependable grouping of symptoms that may lead us reasonably often to a diagnosis if we make a careful study of the symptoms, not forgetting an equally careful study of the patient.

Which of the symptoms enumerated above are we apt to elicit in such a case? And which are likely not to be present? Those present are apt to be belching—with or without food—a sense of flatulence and discomfort, and with these at times a functional disturbance of the heart. Less common symptoms will be choking and a sense of peristaltic unrest and pain. The pain is apt to be due to pylorospasm or cardiospasm or similar spastic states in the colon. As said before, the pain of organic origin is apt to be always located in the same area. But the neurotic places the pains here, there, and yonder, the location differing at different points of the story, though this is not always true. Also it is well to be sure that the patient really means pain, not just discomfort.

The symptoms of pain, nausea, and vomiting are not so commonly present in the dyspeptic neuroses, though vomiting particularly may be of purely nervous origin. Vomiting that occurs immediately after taking food is almost surely of nervous origin. Any patient having these latter symptoms (pain, nausea, or vomiting) has a right to be thoroughly studied before being pronounced free of organic disease—a study that must not overlook the nervous system, the heart, the kidneys, the lungs, and the blood; and in the female, the pelvic organs. Even the milder symptoms, particularly if there is only loss of appetite and some sense of heaviness, demand the same care if they are recent and continuous, and more so if the patient is past middle life when these symptoms first appear. There is also no reason why a nervous patient may not have a gall bladder or an appendix, a pelvic trouble, a nephritis, an anemia, a tabes, a pulmonary tuberculosis, under which circumstances a purely functional diagnosis might be an error.

The history is of great importance and takes time. The case of purely nervous dyspepsia commonly betrays the psychoneurotic basis in his history and his manner of telling it. The story is apt to date back several years—maybe many years, even to childhood—and carries with it the stigmata attaching to one of unstable nerve foundation. The symptoms have not only lasted a long time, but if punctuated with periods of improvement or recovery, they can be identified as periods when the patient was free from overwork, loss of sleep, worry, or other circumstances calculated to impair the function of the digestive system. On the other hand, the symptoms have been worse at times when things went all wrong at home, office, or elsewhere, and the burden of life was about all that could be borne. The neurotic dyspeptic is very apt to improve on a vacation. But vacations are often more strenuous than the daily grind at home, and under these circumstances no or little improvement is to be expected. If no improvement is made on a real, restful vacation time, it is best to suspect organic disease, not necessarily, of course, in the alimentary tract. This question of relief or nonrelief on a real vacation is very important.

A clear-cut history of periodicity is apt to mean abdominal disease, but the cyclic vomiting of children, the gastric crises of tabes, and those periodic attacks of vomiting and abdominal discomfort which are really equivalents of migraine must not be forgotten. It is probably these abdominal attacks that are modifications of sick headache that are most often misinterpreted and relief attempted by surgery. Some doctors seem not to believe in such attacks. But they are real all right and call for great care in the history. Doctor Bassoe of Chicago reported in S. G. O., 1924, a group of these abdominal migraines in which seventy-five per cent had had futile operations. But the history is the main thing and do not forget to inquire about ocular symptoms —the well-known scotomata so common in ordinary migraine. Two other features that should suggest migraine are a great hunger prior to the attack, present in probably one-fourth of the cases, and a good digestion between attacks. These are very important, but are not inquired after unless one suspects such a condition. The headache is often of secondary importance, but is present. These abdominal migraines not infrequently develop later in life, especially in women after the menopause, the premenopausal attacks having been typical migraine. Of similar periodicity, but somewhat more due to organic change, are certain allergic reactions that may manifest themselves by abdominal pain—even localized tenderness, and at times vomiting and diarrhea. Here the history of other allergic phenomena need be inquired into and a hypodermic of adrenalin, if it gives relief, will go far to support your hunch.

Patients with nervous dyspepsia—no matter how intelligent—rarely tell a very straightforward, consistent story. The purely digestive symptoms are jumbled up with symptoms referable to other organs, and there is great difficulty in keeping the patient on a purely digestive recital. Also when it comes to such important data as relation to food, and amount and kinds of food, periods of comfort, how complete and how long they last, we often have to give up in despair. This fact alone should suggest that we branch out in a much wider field of inquiry and uncover the patient's entire personality and his reaction to the various vicissitudes of life. Such patients will frequently have eliminated various foods and reduced the amount of food taken until the result is that he is much below normal weight with consequent loss of endurance—loss of muscular tone—one effect of which is general visceroptosis; there will probably be constipation, headache, backache, fatigue, various vasomotor and other symptoms referable to an upset autonomic nervous system. Some of these are the result of a lowered state of nutrition from underfeeding, and some have always been present and are a part of this patient. It is in this group that spastic colon with the enema habit is apt to be developed. In fact, spastic colon with its rumbling and growling—and even pain—constitutes a leading factor in producing the symptoms of which I am speaking.

As is well known, such physical and nervous wrecks do not always complain most of their digestive troubles—just as often it will be some of the other symptoms just enumerated that are put forward as the chief complaint. The family history is nearly always clarifying and confirmatory, though other members of the family may have had a few or none of the symptoms most complained of by the patient under examination. And I may say that in all baffling cases of abdominal symptoms—particularly symptoms that seem to involve the digestive tract—the family history should be taken first. It is by all means the best way to get a line on the patient's background. Uncovering such a family history serves to impress the fact that while dyspepsia may be the presenting symptom—the one that the patient observes most—it is really only one of a wide range of abnormal sensations—the very multitude of which suggests the absence of organic basis. But it must be borne in mind that the patient will not detail these other symptoms unless they are inquired after. Such a quizzing includes uncovering the patient's reaction to all the conditions of life and work. Is there debt, worry, unhappiness from any cause, loss of sleep, uneasy conscience, disappointment in love, ungratified social aspirations? The doctor that misses these psychic reactions may not only fail to get at the cause of symptoms, but is sure to fail in his therapeutic efforts. The more patiently these matters are brought into the light and the more pointedly the doctor can predict the patient's other symptoms referable to the nervous system, the more apt he is to gain the confidence of the patient.

In reaching a diagnosis, I shall assume that one has satisfied himself of the absence of ulcer, cancer, cirrhosis of liver, tuberculosis, pelvic or rectal pathology, heart or kidney disease, and all the other things that are likely to produce dyspepsia. Ordinarily, in one way or another, this assurance can be reached. There are two conditions, however, that it may be very difficult to eliminate and which may give digestive symptoms such as have been considered. These are chronic cholecystitis and chronic appendicitis. In the last analysis, both these pathological states are only capable of establishment beyond a moderate doubt. They must be and usually are a good guess, though based on certain facts of history and examination that are fairly instructive. A history of acute or subacute attacks, if secured, constitutes an important item, and if such definite attacks cannot be uncovered, be very careful about opening that belly. X-ray study may and often does afford, at least, very suggestive evidence that at one or the other locality pathology lies. There may also be sufficient evidence in the absence of nervous stigmata to warrant operation on one or both of these organs. But if nervous stigmata are present, let the surgeon beware! It would probably not be far wrong to say that in statistical reports on operative procedures for chronic cholecystitis twenty per cent have failed to get satisfactory results. The tendency is to attribute such failure to obscure changes that may have already taken place in the pancreas or the liver. I am wondering whether many of the symptoms complained of may not have been just as easily and more accurately attributed to a poorly functioning nervous system. The results in operations for chronic appendicitis are probably not so good.

There is another angle in the matter of eliminating organic disease that needs to be borne in mind. These dyspeptics under discussion have generally "gone the rounds." Many have been operated on—the point of attack being the appendix, the gall bladder, the pelvic organs, and even the tonsils on the ground that there must be poison absorbed somewhere, and they have usually been improved temporarily.

Having secured all the information possible and having made a careful examination, X-ray and further test may be or may not be made, as one sees fit. The patient may be so convinced of the nervous origin of her troubles that the doctor's fiat is enough without further to-do, or probably such studies may have already been made, including a certain number of foolish investigations. But if the patient has a fear of cancer or other serious pathology or is one that thinks no one understands her case, it is imperative to run up a pretty good bill and present her with a complete internal map. But do not forget that X-rays may be misleading, liver function test even more so, and that the eye and the hand and the willingness to put in a good deal of time asking questions are still of value in the practice of medicine and even surgery.

So, in conclusion, when the abdomen says, "Listen to me," do not think of Charlie McCarthy only. Bear in mind that Mr. Bergen may be announcing from the brain, the spinal cord, the posterior root ganglia, the spinal column, the pleural cavities, the heart muscle, or the pericardium. Or, if you are sure it is Charlie, remember how tricky he is—and in a sense how harmless. That he may disclose himself as a maladjustment of the vegetative nervous system, or as an equivalent of migraine, or an angioneurotic edema, or other allergic reaction, a spastic colon, or a crisis of tabes, and if you make an exploratory section, look out for that smile as if to say, "Now whose head is made of ligneous material?"

DISCUSSION

DR. E. R. ZEMP (Knoxville): Doctor Witt has given us a paper that should stimulate our efforts to make better diagnoses when confronted with abdominal symptoms. I think he goes to the root of the trouble in making a proper diagnosis when he emphasizes the importance of taking a complete history of the case. I believe that, if a complete history is taken on all of our patients, we could almost do without the various laboratory methods of diagnosis. As a matter of fact, we depend entirely too much upon blood counts, X-rays, etc., instead of good histories and good physical examinations. I admit that in some obscure cases all the aids we can obtain are not enough, but even then a complete study of the case will very often reveal the source of trouble.

Doctor Witt has mentioned many errors that might be made if we consider abdominal pain only the result of abdominal pathology. The mistakes resulting from this conclusion have led us often far afield and sometimes result in disaster to the patient. These faulty diagnoses are not confined to any one class of physicians. At some time or another they are made by all of us—both surgeons and internists.

I have often decried the procedure of jerking a patient from the street to the hospital and operating upon him for symptoms of acute abdomen. In some cases the evidence of abdominal disease is so clear that this may be justified as an emergency, but in some cases it has proven to be unfortunate.

A few years ago I was called to give an anesthetic for a child, age five, who had the symptoms of acute appendicitis. The patient was on the operating table, surgeon and assistants were scrubbed up, ready to operate. On examining the child before administering the anesthetic, I discovered he had an extensive right-side lobar pneumonia. The operation was called off, and the child made an uneventful recovery. What would have been the result in this case if he had been operated upon?

I was asked to see a young man about thirty years of age just before being operated upon for acute appendicitis. The history briefly obtained at that time was that he had an attack of acute abdominal pain. As he was in the operating room at the time I saw him, no other diagnosis was made. After the operation he continued to have his pain and proceeded to get worse each day until he died about two weeks later. It was then discovered that he had an acute tubercular spine.

A young girl about ten years of age was operated upon for acute appendicitis. On opening the abdomen, a number of enlarged glands were discovered in the mesentary. The appendix was removed and a diagnosis of malignancy was made. After the operation the temperature continued very high, the patient became delirious, and was extremely ill. I saw this little girl about two weeks after operation. A diagnosis of typhoid fever was easily made at this time. After a very stormy course, she made a complete recovery with only a large abdominal hernia as a reminder of her perilous voyage.

Many other cases of misjudging the cause of abdominal pain might be mentioned, but time forbids. Let me say in closing that the application of the pitfalls mentioned in this practical paper concerns every one of us. In the words of Saint Paul, "We are all sinners, of whom I am chief." Only he will escape—

> "Whose taste exact for faultless fact
> Amounts to a disease."

DR. L. C. SANDERS (Memphis): Doctor Witt has given us an exhaustive summary of the conditions outside the gastrointestinal tract which may be the cause of abdominal symptoms. His report is important when we understand that fully fifty per cent of patients complain of symptoms referable to the digestive system and only about ten per cent are found to have actual disease of the stomach and intestines.

As Doctor Witt has emphasized, the diagnosis of disease involving the gastrointestinal tract can be made only by a careful history, which includes an inquiry into the patient's habits and social, domestic, and financial circumstances, a thorough physical examination, and the utilization of specific laboratory tests. When all this information is obtained, the physician may separate the wheat from the chaff and advise treatment directed toward removal of the cause of the symptoms. Modern diagnostic facilities enable us to arrive at a correct conclusion in a high percentage of cases.

Our greatest difficulty is with those patients who present a multitude of symptoms which cannot be explained on any organic basis. My experience in history taking has shown that patients with organic disease usually have constant or intermittent symptoms, which are always referable to the same location, whereas those with functional disturbances have a wide variety of complaints, which are rarely constant and never confined to one location. The history, therefore, may become the deciding factor after a complete examination has failed to reveal the source of the patient's symptoms.

I believe we can all profit by keeping in mind the many extra-abdominal conditions which may produce intestinal disturbances, as so ably pointed out by Doctor Witt.

DR. J. P. GILBERT (Nashville): In my brief experience of eighteen years in the practice of medicine I have heard Doctor Witt read many practical papers, but I think this is the best I have heard him read. He touched on my field, and I cannot help but express my appreciation of it. I want to give a few remarks and one case report.

I had a thirty-eight-year-old unmarried female under my observation a few weeks ago who gave a pretty clear-cut history of being, as she said, in perfect health until eight years ago when she "jumped over the fence." Ever mindful of some clue in my line, I questioned her carefully about what she meant by "jumping over the fence," and she just said she went out and jumped over the fence as she had done all her life and her back started hurting. The first doctor she went to said she had an "upside-down uterus" and a gastroptosis, for which she was wearing a belt. She has mucous colitis and many other complaints that make up a functional or neurotic picture.

I learned a good many years ago by trial and error to center my attention on the main complaint that a so-called neurotic might make. In inquiring into the history as to what her main trouble was, she said: "Doctor, my back hurts me so badly I cannot sleep at night." She said: "You are the sixteenth doctor I have seen."

I said: "Did anybody ever X-ray your back?"

"No, sir."

I said: "Let's have it X-rayed." We X-rayed it and found a fracture of both pedicles of the fifth lumbar vertebra with a forward dislocation of the body of the vertebra. I cannot blame the men who had seen her before; I am not perfect by any means myself, but she was so typical a neurotic picture, with every complaint that a neurotic has, that I did not blame them for overlooking it. But if I had had pain in the lower part of my back that she must have had as a result of that fracture, and everybody I went to told me it was nervousness, imagination, and all, I think it would make a neurotic out of me.

I would like to make a plea that every neurotic does not necessarily not have some organic disease.

DR. W. H. WITT (closing): Mr. Chairman, I wish to thank the gentlemen for making their commendatory remarks about the meaning of what I had to say, and I hope the things I said out of my hard experience will have a good effect on medical men and surgeons both. Thank you.

TENNESSEE DOCTORS AND THE MILITARY SERVICE

The following is a list of Tennessee doctors who have applied for a commission in the Army or Navy. They are arranged in four categories as follows: first, those who have been commissioned and are on duty; second, those who have been commissioned and are awaiting orders; third, those who have applied for a commission and are awaiting action by the proper authorities; fourth, those who have applied for a commission and been rejected on physical grounds. The list under each category is arranged according to counties.

The list is not complete according to the date of publication. It is accurate in so far as our information goes as of the date the JOURNAL goes to press.

THE HONOR ROLL OF THE MEDICAL PROFESSION IN TENNESSEE NOW SERVING IN THE ARMED FORCES

County	*Name*	*Address*
Anderson	Horton DuBard	Knoxville
Bedford	H. J. Shull	Shelbyville
Blount	R. H. Haralson	Maryville
Blount	Joseph T. Marshall	Chattanooga
Blount	Lowell E. Vinsant	Maryville
Bradley	Dwight N. Arnold	Cleveland
Bradley	A. L. Ball	Cleveland
Campbell	O. H. Coleman	Lafollette
Campbell	Jos. McCoin	Lafollette
Carter	H. B. Damron	Elizabethton
Carter	J. B. Warren	Elizabethton
Cocke	Haynes B. Cates	Newport
Coffee	G. W. Shelton	Manchester
Davidson	James P. Anderson	Nashville
Davidson	Jos. D. Anderson	Nashville
Davidson	F. T. Billings	Nashville
Davidson	James Frazier Binns	Nashville
Davidson	Roger Burrus	Nashville
Davidson	H. M. Carney	Nashville
Davidson	Robert N. Buchanan, Jr.	Nashville
Davidson	Jesse H. Chandler (Col.)	Nashville
Davidson	Marion I. Davis	Nashville
Davidson	J. J. Eberhart	Nashville
Davidson	P. C. Elliott	Nashville
Davidson	Frank F. Ellis	Nashville
Davidson	Joe W. Fenn	Nashville
Davidson	Ray C. Fessey	Nashville
Davidson	Garth E. Fort	Nashville
Davidson	S. F. Fowler	Nashville
Davidson	John W. Frazier, Jr.	Nashville
Davidson	Thos. Frist	Nashville
Davidson	R. K. Galloway	Nashville
Davidson	James C. Gardner	Nashville
Davidson	Hamilton V. Gayden	Nashville
Davidson	H. L. Gilliand	Nashville
Davidson	J. E. Goldsberry	Nashville
Davidson	Thos. Grizzard	Nashville
Davidson	Rafael Hernandez (Col.)	Nashville
Davidson	Irving R. Hillard	Nashville
Davidson	Geo. B. Hubbard	Nashville
Davidson	D. J. Johns, Jr.	Nashville
Davidson	Geo. S. Johnson	Nashville
Davidson	Harry D. Jones	Nashville
Davidson	Sam Ogle Jones	Nashville
Davidson	J. K. Kaufman	Nashville
Davidson	G. E. Kinzel	Nashville
Davidson	W. J. Lee, Jr.	Nashville
Davidson	R. Carl Light	Nashville
Davidson	Jas. A. Loveless	Nashville
Davidson	J. P. Lowe	Nashville
Davidson	Jas. R. McMillan	Nashville
Davidson	Robt. H. Magruder	Nashville
Davidson	Jas. G. Mead	Nashville
Davidson	Cleo M. Miller	Nashville
Davidson	Hugh J. Morgan	Nashville
Davidson	Paul G. Morrissey, Jr.	Nashville
Davidson	Max K. Moulder	Nashville
Davidson	John R. Olson	Nashville
Davidson	Fred W. T. Overton	Nashville
Davidson	Jos. H. Patterson	Nashville
Davidson	Robt. C. Patterson, Jr.	Nashville
Davidson	George C. Porter (Col.)	Nashville
Davidson	E. L. Rippy	Nashville
Davidson	A. F. Russell	Nashville
Davidson	Jos. H. Sayers, Jr.	Nashville
Davidson	Ewing Seligman	Nashville
Davidson	Henry Carroll Smith	Nashville
Davidson	Wm. A. Sullivan	Nashville
Davidson	A. J. Sutherland, Jr.	Nashville
Davidson	W. A. VanNortwick	Nashville
Davidson	Thos. S. Weaver	Nashville
Davidson	B. M. Weinstein	Nashville
Davidson	Arthur L. White	Nashville
Davidson	Claiborne Williams	Nashville
Davidson	Herbert Wilson, Jr.	Nashville
Davidson	W. C. Winton	Nashville
Davidson	Jos. C. Wood	Nashville
Davidson	Thos. E. Wyatt	Nashville
Davidson	Chas. R. Yancey	Nashville
Dickson	W. M. Jackson	Dickson
Dyer	C. L. Denton	Dyersburg
Franklin	Geo. L. Smith	Decherd
Gibson	B. T. Bennett, Jr.	Trenton
Gibson	Roscoe Faulkner	Trenton
Hamblen	D. R. Roach	Morristown
Hamblen	D. Z. Zimmermann	Morristown
Hamilton	C. H. Barnwell	Chattanooga
Hamilton	S. W. Brown	Chattanooga
Hamilton	E. F. Buchner, Jr.	Chattanooga
Hamilton	Douglas Chamberlain	Chattanooga
Hamilton	John W. Claiborne, Jr.	Chattanooga
Hamilton	J. R. Fancher	Chattanooga
Hamilton	J. L. Hamilton	Chattanooga
Hamilton	F. F. Harris	Chattanooga
Hamilton	H. D. Hickey	Chattanooga
Hamilton	J. M. Higginbotham	Chattanooga
Hamilton	H. T. Holden	Chattanooga
Hamilton	Howard H. Karr	Chattanooga

Hamilton—J. J. Killeffer____Chattanooga
Hamilton—P. H. Livingston____Chattanooga
Hamilton—Augustus McCravey____Chattanooga
Hamilton—Richard H. Mellen____Chattanooga
Hamilton—Paul H. Milton____Chattanooga
Hamilton—E. T. Newell, Jr.____Chattanooga
Hamilton—Robt. C. Robertson____Chattanooga
Hamilton—Wm. J. Sheridan____Chattanooga
Hamilton—M. J. Smith, Jr.____Chattanooga
Hamilton—Wm. A. Stem____Chattanooga
Hamilton—W. Dean Steward____Chattanooga
Hamilton—Paul R. Swanson____Chattanooga
Hamilton—Robert A. Wise____Chattanooga
Hamilton—J. C. Wright____Chattanooga
Hardeman—D. L. Brint____Bolivar
Hardin—C. Whitman Borg____Savannah
Hardin—S. L. Stephenson, Jr.____Savannah
Hawkins—Landrum Tucker____Rogersville
Hawkins—A. S. Yates____Rogersville
Henry—J. W. Didcoct____Paris
Henry—J. C. McKissick____Paris
Knox—E. E. Carrier____Knoxville
Knox—L. W. Chesney____Knoxville
Knox—Malcolm F. Cobb____Knoxville
Knox—W. A. DeSautelle____Knoxville
Knox—Geo. G. Henson____Knoxville
Knox—C. R. Huffman____Knoxville
Knox—C. E. Irwin____Knoxville
Knox—H. H. Jenkins____Knoxville
Knox—J. O. Kennedy____Knoxville
Knox—J. H. Lesher____Knoxville
Knox—J. D. McCullough____Knoxville
Knox—Wm. T. McPeake____Knoxville
Knox—J. L. Montgomery____Knoxville
Knox—Ralph Nichols____Knoxville
Knox—B. M. Overholt____Knoxville
Knox—Herschel Penn____Knoxville
Knox—Jos. L. Raulston, Jr.____Knoxville
Knox—J. S. Ruffin, Jr.____Knoxville
Knox—P. D. Smith____Knoxville
Knox—Geo. W. Tharp____Knoxville
Knox—Leon J. Willien____Knoxville
Lake—W. T. Rainey____Tiptonville
Lauderdale—J. H. Nunn____Ripley
Lawrence—L. C. Harris, Jr.____Lawrenceburg
Loudon—F. E. Hufstedler____Lenoir City
Loudon—Avery Leeper____Lenoir City
McMinn—S. B. McClary, Jr.____Etowah
McNairy—H. O. Mason____Adamsville
Madison—L. D. Farragut____Bemis
Madison—H. H. Herron____Bemis
Madison—C. H. Brown____Jackson
Madison—R. S. Hellmann____Jackson
Madison—Carl Rogers____Jackson
Madison—A. R. Taylor____Jackson
Madison—J. R. Thompson, Jr.____Jackson
Madison—P. E. Wylie____Jackson
Madison—Stevens Byars____Mercer
Marshall—A. L. Cooper____Chapel Hill
Marshall—H. B. Disharoon____Lewisburg
Maury—W. N. Cook____Columbia
Maury—Robin Lyles____Columbia
Maury—J. B. Miller____Columbia
Monroe—D. F. Heuer, Jr.____Sweetwater
Monroe—R. M. Price____Sweetwater
Montgomery—J. A. Culbertson____Clarksville
Obion—R. M. Darnall____Union City
Pickett—Floyd B. Hay____Byrdstown
Putnam—H. H. Taylor____Cookeville
Putnam—R. L. Akin____Monterey
Roane—G. D. Schuessler____Oliver Springs
Roane—F. Davis Owings____Rockwood
Rutherford—Harvey W. Carter____Murfreesboro
Sevier—Charles E. Pack, Jr.____Sevierville
Sevier—R. M. Perry____Sevierville
Shelby—Chas H. Avent____Memphis
Shelby—W. T. Black, Jr.____Memphis
Shelby—Samuel Blackwell____Memphis
Shelby—W. B. Blaisdell, Jr.____Memphis
Shelby—James M. Bethea____Memphis
Shelby—Philip B. Bleecker____Memphis
Shelby—R. E. Bland (Col.)____Memphis
Shelby—James M. Brockman____Memphis
Shelby—W. T. Braun____Memphis
Shelby—J. Hughes Chandler____Memphis
Shelby—J. M. Chandler____Memphis
Shelby—J. M. Chambers, Jr.____Memphis
Shelby—R. B. Chrisman, Jr.____Memphis
Shelby—Phillip T. Crawford____Memphis
Shelby—J. A. Danciger____Memphis
Shelby—Chas. J. Deere____Memphis
Shelby—J. D. Evans____Memphis
Shelby—M. L. Evans____Memphis
Shelby—Taylor Farrar____Memphis
Shelby—Benj. Fendler____Memphis
Shelby—L. F. Ferrell____Memphis
Shelby—Jos. A. Gardner, Jr.____Memphis
Shelby—Geo. E. Gish____Memphis
Shelby—V. A. Hall____Memphis
Shelby—Carl M. Harwell, Jr.____Memphis
Shelby—R. D. Henderson____Memphis
Shelby—R. A. Hennessey____Memphis
Shelby—B. S. Henry____Memphis
Shelby—A. L. Herring____Memphis
Shelby—C. H. Householder____Memphis
Shelby—John L. Houston____Memphis
Shelby—James G. Hughes____Memphis
Shelby—John D. Hughes____Memphis
Shelby—Chas. W. Ingle____Memphis
Shelby—Albert M. Jones____Memphis
Shelby—W. B. Key____Memphis
Shelby—John C. King____Memphis
Shelby—Richard King____Memphis
Shelby—Chas. M. Lobrano____Memphis
Shelby—I. E. Lobrano, Jr.____Memphis
Shelby—D. G. Lockwood____Memphis
Shelby—J. P. Long, Jr.____Memphis
Shelby—O. S. McCown, Jr.____Memphis
Shelby—Wm. Battle Malone, II____Memphis
Shelby—Thomas P. Manigan____Memphis
Shelby—P. M. Markle____Memphis
Shelby—R. A. Miller____Memphis
Shelby—J. P. Moss____Memphis
Shelby—Geo. E. Paullus, Jr.____Memphis
Shelby—Ben Pentecost____Memphis
Shelby—J. R. Pepin____Memphis
Shelby—V. D. Pettit____Memphis
Shelby—Hugh R. Raines____Memphis

Shelby	L. C. Ramsay	Memphis
Shelby	Chas. G. Robinson	Memphis
Shelby	P. B. Russell, Jr.	Memphis
Shelby	E. C. Segerson	Memphis
Shelby	J. L. Shaw	Memphis
Shelby	S. D. Sullenberger	Chattanooga
Shelby	M. J. Tendler	Memphis
Shelby	W. M. Tipton	Memphis
Shelby	A. B. Tripp	Memphis
Shelby	I. F. Tullis, Jr.	Memphis
Shelby	C. F. Varner	Memphis
Shelby	R. A. Wallace	Memphis
Shelby	T. L. Waring	Memphis
Shelby	O. S. Warr, Jr.	Memphis
Shelby	W. W. Watkins	Memphis
Shelby	J. E. Watson, Jr.	Memphis
Shelby	Julian K. Welch	Memphis
Shelby	Harwell Wilson	Memphis
Shelby	J. E. Wilson	Memphis
Sullivan	G. W. McCall	Bristol
Sullivan	B. W. Mongle	Bristol
Sullivan	H. O. Bolling	Kingsport
Sullivan	M. J. Adams	Kingsport
Sullivan	K. R. Kiesau	Kingsport
Sullivan	J. F. Morton	Kingsport
Sullivan	R. G. Nichols	Kingsport
Sullivan	Raymond A. Steadman	Kingsport
Sumner	R. M. Huggin	Gallatin
Tipton	O. J. Swisher	Covington
Unicoi	R. H. Harvey	Erwin
Unicoi	W. C. Humbert	Erwin
Union	Norman H. Rucker	Luttrell
Washington	C. S. Gresham	Johnson City
Washington	W. L. Poole	Johnson City
Washington	W. G. Preas	Johnson City
Washington	H. B. Cupp	Mountain Home
Washington	J. B. Warren	Mountain Home
Weakley	Madison H. Buckley	Martin
Wilson	O. R. Hill	Lebanon
Wilson	James McFarland, Jr.	Lebanon
Wilson	W. K. Tilley	Lebanon

DOCTORS WHO HAVE RECEIVED COMMISSIONS AND AWAITING ORDERS TO ACTIVE DUTY

County	*Name*	*Address*
Anderson	A. K. Morris	Fork Mountain
Anderson	George M. Kelley	Lake City
Bradley	Claud H. Taylor	Cleveland
Bradley	Madison S. Trewhitt	Cleveland
Cocke	Glen C. Shults	Cosby
Davidson	David F. Johnson	Madison College
Davidson	Newton A. Cannon	Nashville
Davidson	James H. Mathews	Nashville
Davidson	Nathan P. Horner	Nashville
Davidson	Sol Lowenstein	Nashville
Davidson	Joe M. Strayhorn	Nashville
Davidson	Willard O. Tirrill, Jr.	Nashville
Davidson	Paul L. Warner	Nashville
Davidson	A. S. Koening	Old Hickory
Hamilton	Franklin B. Bogart	Chattanooga
Hamilton	Julian C. Brooks, Jr.	Chattanooga
Hamilton	Walter Buckner	Chattanooga
Hamilton	Harley C. Darnall	Chattanooga
Hamilton	Richard V. Fletcher	Chattanooga
Hamilton	Fay B. Murphy, Jr.	Chattanooga
Hamilton	Eugene F. McCall	Chattanooga
Hamilton	Wm. E. North	Chattanooga
Hamilton	Oliver L. Von Canon	Chattanooga
Knox	R. G. Brashear	Knoxville
Knox	H. S. Christian	Knoxville
Knox	Sam P. Davidson	Knoxville
Knox	J. H. Duggins	Knoxville
Knox	T. B. Drinnen	Knoxville
Knox	J. G. Eblen	Knoxville
Knox	Glen D. Grubb	Knoxville
Knox	Oliver W. Hill, Jr.	Knoxville
Knox	Willard J. Irwin	Knoxville
Knox	R. P. Layman	Knoxville
Knox	John S. Powers, Jr.	Knoxville
Knox	J. W. Riggs	Knoxville
Knox	John A. Range	Knoxville
Knox	J. M. Stockman	Knoxville
Knox	A. J. Weber	Bearden
Obion	Hal E. Bennett	Troy
Obion	Edward W. Barksdull	Union City
Polk	John H. Lillard	Benton
Shelby	George M. Bogardus	Memphis
Shelby	Jacob A. Danciger	Memphis
Shelby	Dale E. Fox	Memphis
Shelby	Harold Feinstein	Memphis
Shelby	Nathanial W. Kuykendall, Jr.	Memphis
Shelby	Robert E. Lawson	Memphis
Shelby	Wm. P. Maury, Jr.	Memphis
Shelby	Bedford T. Otey	Memphis
Shelby	Alfred H. Page	Memphis
Shelby	Ira F. Porter	Memphis
Shelby	Raymond W. Polk	Memphis
Shelby	Wm. H. Parker	Memphis
Shelby	Bryant S. Swindoll	Memphis
Shelby	Horace G. Williams	Memphis
Sullivan	R. H. Brown	Kingsport
Sumner	Benjamin H. Warren	Gallatin
Washington	C. P. Wofford	Johnson City
Wayne	Dexter L. Woods	Waynesboro

DOCTORS WHO HAVE APPLIED AND WHOSE COMMISSIONS ARE PENDING

Bradley	Wm. A. Garrott	Cleveland
Davidson	L. R. Gayden	Nashville
Davidson	James T. Hayes	Nashville
Davidson	Travis H. Martin	Nashville
Davidson	Paul E. Purks	Nashville
Hamilton	Alvin H. Benz	Chattanooga
Hamilton	Tim J. Manson	Chattanooga
Knox	Richard N. Duffey	Knoxville
Knox	E. M. Eddington	Knoxville
Knox	A. H. Lancaster	Knoxville
Knox	Owen D. Moore	Knoxville
Knox	Wiley R. Smith	Knoxville
Lauderdale	W. V. Sanford	Ripley
Shelby	M. W. Adams	Memphis
Shelby	Justin H. Adler	Memphis
Shelby	Jacob Alperin	Memphis
Shelby	C. G. Andrews	Memphis
Shelby	James D. Biles	Memphis
Shelby	R. F. Bonner	Memphis
Shelby	Carey Bringle	Memphis

Shelby—Joseph A. Buchignani ---------- Memphis
Shelby—R. C. Ching ---------- Memphis
Shelby—Floyd M. Davis ---------- Memphis
Shelby—E. S. Eddins ---------- Memphis
Shelby—C. B. Etter ---------- Memphis
Shelby—B. F. Floyd ---------- Memphis
Shelby—H. B. Gotten ---------- Memphis
Shelby—Nicholas Gotten ---------- Memphis
Shelby—F. A. Goldberg ---------- Memphis
Shelby—H. D. Gray ---------- Memphis
Shelby—H. J. Jacobson ---------- Memphis
Shelby—O. N. Jones ---------- Memphis
Shelby—C. K. Lewis ---------- Memphis
Shelby—J. H. Lotz ---------- Memphis
Shelby—J. W. McElroy ---------- Memphis
Shelby—Eugene E. McKenzie ---------- Memphis
Shelby—J. W. McKinney ---------- Memphis
Shelby—E. D. Mitchell, Jr. ---------- Memphis
Shelby—J. C. Mobley ---------- Memphis
Shelby—Henry Moskowitz ---------- Memphis
Shelby—D. W. Oelker ---------- Memphis
Shelby—C. B. Olim ---------- Memphis
Shelby—Wm. T. Satterfield ---------- Memphis
Shelby—D. E. Scheinberg ---------- Memphis
Shelby—Hugh Smith ---------- Memphis
Shelby—P. A. Statile ---------- Memphis
Shelby—R. C. Taylor ---------- Memphis
Shelby—S. I. Wener ---------- Memphis

DOCTORS WHO APPLIED FOR COMMISSIONS, BUT REJECTED ON PHYSICAL GROUNDS

Carter—W. W. Evans ---------- Elizabethton
Davidson—J. J. Ashby ---------- Nashville
Davidson—Lynch D. Bennett ---------- Nashville
Davidson—David W. Hailey ---------- Nashville
Davidson—Thos. M. Jordan ---------- Nashville
Davidson—Carl Kirchmaier ---------- Nashville
Davidson—Eston D. White ---------- Nashville
Davidson—V. J. Wong ---------- Nashville
Davidson—Joe E. Sutherland ---------- Madison College
Davidson—J. H. Solomon ---------- Old Hickory
Gibson—Henry N. Moore ---------- Milan
Hamilton—D. Isbell ---------- Chattanooga
Hamilton—D. B. Karr ---------- Chattanooga
Hamilton—J. G. McMillan ---------- Chattanooga
Hamilton—Fred E. Marsh ---------- Chattanooga
Hamilton—J. R. Martin ---------- Chattanooga
Hamilton—J. J. Word ---------- Chattanooga
Knox—Charles W. Black ---------- Knoxville
Knox—Jack Chesney ---------- Knoxville
Knox—William E. Clark ---------- Knoxville
Knox—George L. Inge ---------- Knoxville
Knox—Joel C. Morris ---------- Knoxville
Knox—Bruce R. Powers ---------- Knoxville
Knox—V. I. Smith ---------- Knoxville
Loudon—J. P. Cullum ---------- Lenoir City
Madison—Glenn D. Batten ---------- Jackson
Madison—Leland M. Johnston ---------- Jackson
Madison—John C. Pearce ---------- Jackson
Marshall—J. T. Gordon ---------- Lewisburg
Shelby—William A. Barnes ---------- Memphis
Shelby—E. D. Connell ---------- Memphis
Shelby—Jewell M. Dorris ---------- Memphis
Shelby—George C. Furr ---------- Memphis
Shelby—A. J. Grobmyer ---------- Memphis
Shelby—Robert M. Gross ---------- Memphis
Shelby—Robert A. Knight ---------- Memphis
Shelby—Phil M. Lewis ---------- Memphis
Shelby—Swan B. Moss ---------- Memphis
Shelby—Phillip C. Schreier ---------- Memphis
Shelby—Lawrence Sebulsky ---------- Memphis
Shelby—Edwin M. Stevenson ---------- Memphis
Sullivan—P. W. Cox ---------- Kingsport
Washington—John F. Moore ---------- Johnson City

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H. H. SHOULDERS, M.D., Editor and Secretary

JULY, 1942

EDITORIAL

THE FUNCTIONS OF THE PROCUREMENT AND ASSIGNMENT SERVICE

The Procurement and Assignment Service of the federal government was created and implemented to serve as an instrument through which doctors, dentists, and veterinarians would be made available for many needed services, both civilian and military, on a voluntary basis.

The more important of the needed services, in so far as doctors are concerned, fall naturally into five classifications. They are: (1) the armed services (the Army and the Navy); (2) community services as distinguished from institutions and government agencies; (3) war industries, especially those situated some distance from established medical facilities; (4) medical teaching; (5) government agencies which supply professional services to the public or to employees.

Certainly all will agree that the Army and the Navy are entitled to first call. This first call applies not only to numbers; it applies also to quality, age, and physical fitness. All the needs which fall under the other four categories must be met after these primary needs have been supplied.

It is necessary to remember also that the needs of the Army and the Navy are not static. The need varies in a fixed ratio to the number of men inducted into the various services.

There might be some dispute as to which of the four other needs should receive consideration next in order. Broadly speaking, the civilian needs, above defined, come next for several reasons: The women, the children, and the aged are embraced in this group. The mothers, wives, and children of soldiers will need services. The need includes every form of medical care, both preventive and curative. The services assured them will have an effect on the morale of the men at the front.

It is to be remembered that the rural areas did not have an excess supply of doctors before the emergency arose.

There surely will be little dispute as to the importance of this service and the place it should occupy in relation to all other needed services.

The medical school situation probably should come next in order. All with a knowledge of the situation are agreed that the continued production of new doctors is essential to the maintenance of the other needed services in the future, and, therefore, has a bearing upon each and every one of the several classes of service.

Medical schools which are situated to do so have been requested to give the four-year course in thirty-six months by teaching continuously. In addition to this, they are required to function on an efficient basis to the end that the training not be inferior.

It is obvious that such a program requires the services of doctors who are trained in medical pedagogy. Many doctors so trained, regardless of their age group, are requested to sacrifice their desire to enter the military service and continue to augment their important services in the performance of the duties they are so well qualified to perform. Such men are being required to devote more of their time to teaching than would be required under normal conditions.

It is not an easy matter for a medical school to keep in service a sufficient number of qualified teachers and at the same time meet the other demands made upon it by the emergency.

In so far as the three medical schools in Tennessee are concerned, it can be said that the directing heads of these institutions, in cooperation with the Procurement and Assignment Service, have accomplished just that.

It should be said in behalf of the younger men who are kept in teaching positions that they are entitled to credit for their willingness to serve in the positions assigned to them by the authorities whose function it is to make such decisions. The best results cannot be accomplished with each and every person making decisions for himself as to where he can or would like to serve.

Next in order are the new industries related to the war effort. In some instances these plants are situated near hospitals and other established facilities and present no difficult problems. In other instances, the new plants are situated far away from established facilities. To supply these plants and the population which has grown up about them with needed services will require the dislocation of doctors. This situation is further complicated by the fact that some of them are operated by the government; others are operated by private concerns under contract with the government. Others operate as private concerns and sell their products to the government. The product of each may be of equal importance.

There is, of course, no essential difference in the medical needs of each, nor in the medical service problems presented by each essentially different, except that there may be complication with reference to financing an administration in some cases.

A fairly high percentage of doctors under forty-five years of age are being disqualified for military service on physical grounds. This is also true of younger doctors who have just completed their intern training. Many of these younger doctors are not established in practice. It is believed that a sufficient number of these men will be available to supply the needs of such plants as require the dislocation of doctors.

Lastly, government agencies which employ physicians for various purposes are entitled to equal consideration. First in order comes public health departments—local, state, and national. It is necessary, of course, that these departments function. It is to be remembered, however, that they cannot function on a normal basis and at the same time supply some of the trained personnel to serve the troops.

A mobile Army is in very urgent need of the services of a well-trained public health administrator. Obviously, it would be unfair and unwise to leave all the trained personnel connected with health departments in their present employment and supply the needs of the Army by untrained personnel. It is necessary that key positions in both places be filled by capable men.

The Tennessee Valley Authority is another example of a government agency which employs physicians and supplies medical care to employees.

At the present time several construction projects are under way by the Authority. All these various activities come under the same category as other industries in so far as the need for medical service is concerned. Some adjustments on their part will be necessary in order to meet the primary needs above referred to.

As stated elsewhere capable young doctors are being disqualified for military service on physical grounds. The professional qualities of these men may be equal to or above those of men who are physically qualified for military service. The doctor who is physically disqualified for military service is in position to take the place of the man employed by the agency and found to be qualified for military service. By such a step both men are brought into intimate contact with the war effort in the most effective manner possible. Of course, such steps cannot be taken until physical examinations have been made to determine who is physically qualified and who is not. When this is done and when the minimum need is determined, it will be possible to make the necessary adjustments in such a way as to meet the needs of the Army and Navy and the various other agencies.

As has been said very often, the nation is engaged in an all-out war. The emergency demands adjustments in our personal lives. It demands adjustment in our professional life and in our community life. It is only right and fair that proper adjustments be made by all government agencies which employ doctors. It is believed that these adjustments are not only possible, but that they can be made without great difficulty, if the thought is kept uppermost in our minds that the Army and Navy must have first call, and that the first call in this instance applies not only to numbers, but to age, quality, and physical fitness.

The Procurement and Assignment Service is faced with its supreme test as to whether it can function effectively all along the line on a voluntary basis. Its success or failure depends on the wholehearted cooperation of the medical profession regardless of the type of professional work each is engaged in at the moment.

It can be stated as a fact that the doctors of Tennessee have cooperated in such an overwhelming manner that a close approach has been made to the quota for the Army and Navy assigned to the state for the year ending December 31, 1942. This result, of course, inevitably brings some impairment to the services all along the line, but it is believed that a minimum of impairment has been inflicted upon civilian, industrial, institutional, and governmental services. The essential cooperation calls for willingness to sacrifice, not only one's desires in the matter, but the sacrifice of position and finances, if necessary, for the preservation of the nation.

Mr. McNutt, in his statement to the House of Delegates of the American Medical Association, in Atlantic City, did not necessarily issue a threat to the profession. He stated a fact to the effect that if the present setup does not work effectively on a voluntary basis then some other and more effective method of procedure must be found.

It is still the hope of all the leaders in the matter that the system will function effectively and to the benefit of all the agencies and communities concerned, and lastly to the medical profession.

DEATHS

Dr. Jefferson D. Hopper

Dr. Jefferson D. Hopper, Jackson, Tennessee; Kentucky School of Medicine, Louisville, 1892; aged eighty; died April 22 of cerebral sclerosis.

Dr. George W. Brasher

Dr. George W. Brasher, Jackson, Tennessee; University of Tennessee, College of Medicine, 1909; aged seventy-one; died June 25 of pneumonia.

Dr. W. B. Eason

Dr. W. B. Eason, Jackson, Tennessee; Tulane University of Louisiana, School of Medicine, New Orleans, 1898; aged sixty-seven; died June 9, 1942.

Dr. John W. Frost

Dr. John W. Frost, Lobelville; Memphis Hospital Medical College, 1913; aged fifty-five; died April 22, 1942.

Dr. Richmond McKinney

Dr. Richmond McKinney, Memphis; Memphis Hospital Medical College, 1894; aged sixty-eight; died June 30, 1942.

RESOLUTIONS

A Memorial to Doctor J. R. Nankivell

In the passing of Dr. J. R. Nankivell, McMinn County Medical Society has lost one of its most beloved and enthusiastic members. Doctor Nankivell was a man of more than ordinary attainments. He was a man that to know was to love. He filled many important positions in the medical profession. He served in World War I in the Sanitary Division as major. Doctor Nankivell was a Christian gentleman and he devoted his entire life to the relief of suffering humanity, and we, his associates in medicine, will miss his kind words and advice in our medical meetings which he seldom ever missed.

Whereas, Almighty God, in his infinite wisdom, has removed Doctor Nankivell from his earthly activities and from the presence of his family and friends; and

Whereas, Doctor Nankivell was for many years a practicing physician in McMinn County; and

Whereas, we deplore his loss, but bow to the will of the heavenly Father, who doeth all things well.

Now, therefore, we, as the committee of McMinn County Medical Society, do hereby express on behalf of the society its sense of personal and public loss in the death of Doctor Nankivell, and do hereby respectfully request that these resolutions be spread upon the records of McMinn County Medical Society, and that a copy be mailed to the family of the deceased as an expression of our sympathy with them in their time of sorrow, and that a copy be mailed to the Tennessee State Medical Association, and a copy be sent to the county paper.

Respectfully submitted,
D. Paris Brendle, M.D.
Wm. R. Arrants, M.D.

NEWS NOTES AND COMMENTS

Change of Address

E. E. Northcutt, Newport, to Hatteras, North Carolina.

Francis H. Cole, Nashville, to Oakville Memorial Hospital, Oakville, Tennessee.

Irving H. Hillard, Nashville, to Station Hospital, Camp Davis, North Carolina.

Cleo M. Miller, Nashville, to 331 MacArthur Avenue, Panama City, Florida.

Bernard M. Weinstein, Nashville, to Station Hospital, Fort McClellan, Alabama.

W. C. Winton, Rochester, New York, to California Sanatorium, Belmont, California.

H. D. Hickey, Chattanooga, to 315th Field Artillery, Camp Rucker, Alabama.

J. M. Higginbotham, Chattanooga, to William Beaumont General Hospital, El Paso, Texas.

Robert A. Wise, Chattanooga, to La Gard General Hospital, New Orleans, Louisiana.

William S. Muse, Knoxville, to United States Naval Hospital, Charleston, South Carolina.

O. F. Forseid, Morristown, to Neenan, Wisconsin.

Herschel Penn, Knoxville, to Dispensary, United States Naval Air Station, Jacksonville, Florida.

Joe L. Raulston, Fountain City, to William Beaumont Hospital, El Paso, Texas.

Burns A. Dobbins, Jr., Sweetwater, to Presbyterian Hospital, 168th and Broadway, New York City.

A. L. Herring, Memphis, to Barksdale Field, Alabama.

James F. Morton, Kingsport, to Company "D," 313th Medical Battalion, 88th Infantry Division, A. U. S., Camp Gruber, Muskogee, Oklahoma.

Ben H. Warren, Gallatin, to 1431 South Limestone, Lexington, Kentucky.

Dr. Kate Savage Zerfoss, Nashville, has been appointed a member of the Council of the Southern Medical Association from Tennessee for a regular council term of five years beginning in mid-November, the appointment having been announced recently by the president-elect, Dr. Harvey F. Garrison, Jackson, Mississippi. Doctor Zerfoss succeeds Dr. Horton Casparis, Nashville, whose term will expire with the close of the Richmond meeting in November.

Doctor Zerfoss is the daughter of the late Dr. Giles C. Savage, Nashville, one of the founders and an early president of the Southern Medical Association.

The Presidential Address in the Congressional Record

The excellent presidential address delivered by Dr. Hiram A. Laws, Jr., at Memphis has been published in the *Congressional Record* for Wednesday, May 27, 1942.

It will be remembered that the address dealt with the evolutionary developments of the medical department of the Army in the care of soldiers.

This is a fine compliment to Doctor Laws and to the address.

MEDICAL SOCIETIES

Anderson-Campbell County:

The Anderson-Campbell County Medical Society met in regular monthly session at the Russell Hotel in La Follette on Thursday evening, May 28, with the following members present: Drs. J. M. Cox, U. S. Carden, R. L. Gallaher, P. M. Dings, H. C. Chance, S. D. Queener, R. C. Pryse, M. L. Davis, J. P. Lindsey, O. E. Ballou, and J. S. Hall. Dr. W. T. Gallaher was a visitor.

Dr. J. M. Cox, president, presided. After reading the secretary-treasurer's report, Dr. U. S. Carden tendered his resignation as secretary-treasurer of the society. His resignation was accepted. The society then elected Dr. J. S. Hall of Clinton secretary-treasurer to fill out Doctor Carden's unexpired term. Doctor Hall accepted and then resigned as vice-president. His resignation as vice-president was accepted and Dr. O. E. Ballou of Clinton was duly elected vice-president.

On motion, it was decided to have the next meeting on June 25 at the Cove Lake Inn at Caryville at 7:00 P.M. Doctor Gallaher was put in charge of the local arrangements and it was decided to invite the ladies. Dr. W. S. Austin is to be invited to speak at this meeting.

J. S. HALL, M.D., *Secretary.*

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met at Waynesboro on May 26 with fair attendance.

Dr. Charles G. Andrews of Memphis gave an excellent paper on "Extrauterine Pregnancy." Dr. Henry D. Gotten, also of Memphis, discussed "Low-Back Pain." Both papers were illustrated with slides.

For two items of news from our area: Dr. Charles Whitman Borg, formerly health officer of Hardin County, is now at Keesler Field, Biloxi, Mississippi. Dr. Leo Harris, Jr., Lawrenceburg, is located at the Lawson General Hospital, Atlanta, Georgia.

O. H. WILLIAMS, M.D., *Secretary.*

Our regular monthly meeting of the Five-County Medical Society was held at Waynesboro on June 30.

Dr. Watt Yeiser of Columbia gave us an excellent paper on "Urinary Calculi."

Dr. Dexter L. Woods, Waynesboro, read a paper on "Surgical Emergencies in General Practice."

We had interesting discussions on both papers.

Dr. Dexter L. Woods of Waynesboro has already been commissioned a captain in the Medical Corps of the Army. The commissions of Drs. J. V. Hughes and R. J. DeFord, Savannah, are pending.

Dr. C. C. Stockard, Lawrenceburg, gave the physicians of our area a fish fry on July 10 at Lawrenceburg. Dr. Leo Harris entertained his friends at 5:00 P.M. before the dinner at his clinic.

The society is "recessing" for three months, and our next meeting will not be until the last Tuesday in October (October 27).

O. H. WILLIAMS, M.D.,
Secretary-Treasurer.

Hamilton County:

On July 2 Dr. Edward T. Newell, Sr., read a paper on "Carcinoma Breast Valuation of Surgery, Radium, and X-ray."

The next meeting of the society will be held on August 6. Dr. C. R. Thomas' subject will be "Gold in the Treatment of Arthritis."

Knox County:

On June 30 Dr. R. L. Bennett of Warm Springs, Georgia, presented a paper on "Kenny Method of Treatment of Acute Poliomyelitis with Demonstration."

Madison County:

The Madison County Society will have its next regular meeting the first Tuesday in September (September 1).

Robertson County:

The Robertson County Medical Society met June 9, one week earlier than the regular date, as the guest of Dr. John Hawkins at his cottage on Lake Wartrace. Those present were Doctors Kempf, Hawkins, Porter, Freeman, Banks, Stone, Wilkison, and Rude. Visitors were Drs. John R. Glober of New Orleans, Carl S. McMurray of Nashville, Duncan Eve of Nashville, W. R. Cate of Nashville, Mr. Robert Raulston and Mr. Jim Brown of Springfield.

Doctor Kempf, vice-president, presided. Mr. Robert Raulston was introduced and made a talk explaining the Farm Security Medical plan. Doctors Freeman, Rude, and Stone were appointed on a committee to work out details with the Farm Security Administration. Mr. Jim Brown was named trustee of the fund, after the committee, composed of Doctor Elder, president; Doctor Kempf, vice-president; and Doctor Freeman, secretary, checked the fund.

Doctor Cate read a paper on "Cardiac Neurosis," followed by general discussion.

The black-out occurred at the time. Everyone had a general good time. The host was gracious in his hospitality and the food was delicious. The meeting adjourned to meet at the hospital, unless plans are changed, July 21, 1942.

JOHN S. FREEMAN, M.D.,
Secretary-Treasurer.

Washington, Carter, Unicoi Counties:

The Washington, Carter, and Unicoi Counties Medical Society held its regular monthly meeting at the Hotel Erwin, Erwin, Tennessee, on June 4, 1942. Thirty-seven members and guests were present. A Dutch dinner preceded the meeting. The society discussed at length the adoption of a revised basic fee schedule, but definite action by the society was postponed until the next meeting.

The appointment of Dr. J. G. Moss as an adviser to the representatives of the Procurement and Assignment Service was confirmed in a letter from Dr. W. C. Dixon of Nashville.

The speaker of the evening was Dr. O. C. Hansen-Pruss, associate professor of medicine at Duke University. He was introduced by the president. Doctor Hansen-Pruss gave an excellent discussion of the various types of anemias and the clinical application of bone marrow studies. His talk was illustrated by slides.

The president announced that at the next meeting of the society the principal speaker will be Dr. Jarrel Penn of Knoxville, and that, as usual, there will not be any meetings during July and August.

CHARLES P. WOFFORD, M.D.,
Secretary-Treasurer.

Wilson County:

At the meeting held July 9, Dr. W. K. Tilley, Lebanon, read a paper on "Surgical Diseases of the Stomach." Dr. Phil Turner presented a case report.

On August 6 Dr. J. L. Ames' subject will be "Present-Day Treatment of the Anemias" and Dr. R. C. Kash will present a case report.

OTHER MEDICAL SOCIETIES

The American Congress of Physical Therapy will hold its twenty-first annual scientific and clinical session September 8, 10, 11, and 12, 1942, inclusive, at the Hotel William Penn, Pittsburgh, Pennsylvania.

For information concerning the seminar and program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

The American College of Physicians will hold its 1943 session in Philadelphia, April 13-16, 1943.

The general management of the session and technical exhibits will be handled by the executive secretary, Mr. E. R. Loveland, 4200 Pine Street, Philadelphia.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Pentothal Sodium in Relation to Ophthalmologic Procedures. Lorhan, Guernsey, and Rannie. Anesthesia and Analgesia, September-October, 1941.

Pentothal sodium offers an ideal anesthetic for ophthalmologic procedures, for in the use of local anesthesia there is frequently lack of cooperation on the part of the patient and in general anesthesia the anesthetist is in the way. Morphine is given preoperatively and atropine is given to prevent sneezing.

Pentothal sodium is administered in a 2.5 per cent or a five per cent solution intravenously. In a series of 344 cases results were excellent. Amounts administered ranged from two cubic centimeters to eighty cubic centimeters and time of operation varied from three to eighty-nine minutes, averaging from fifteen to twenty-five minutes. There were quiet eyes, satisfied patients, and low incidence of nausea and vomiting.

There were fifty-four complications, many of which were minor and of short duration. These complications included nausea and vomiting, tachycardia, arrhythmia, brachycardia, slowing of respiration, and some nervous disturbances.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Further Studies on Erythroblastosis Neonatorum of Obstetric Significance. Carl T. Javert, M.D. American Journal of Obstetrics and Gynecology, 43: 6, 921-940, June, 1942.

Erythroblastosis neonatorum runs much of its course in utero and produces certain manifestations which are of significance to the obstetrician. It is the purpose of the communication to emphasize certain obstetric features revealed by a study of fifty-five cases. The author presents a classification of erythroblastosis based on fifty-five cases showing an incidence of the disease as 1:438. The mortality rate appears to decrease in infants born nearer term. Primiparas having infants with erythroblastosis seem prone to have subsequent babies with the disease, whereas the recurrence in multiparas is about fifty per cent. Such a relationship points to a dominant Mendelian characteristic inherited from the parents, and the Rh factor was discussed from this point of view. An intraplacental menatoma was found in eight cases. These were of varying age, and contained numerous normoblasts and erythroblasts most likely of fetal origin. Such a lesion provides for the transmission of the Rh agglutinogen, or some other factor as yet unknown, from the fetal circulation to that of the mother. In such a manner iso-immunization of the mother could take place. The formation of antibodies in the mother, with the passage of these through the placenta into the fetal circulation, is probably responsible for the red cell hemolysis and the widespread deposition of hemosiderin pigment which characterizes the disease. The chief maternal complications were toxemia of pregnancy and excessive uterine enlargement. Congenital anomalies in the infants were frequently observed. The relationship of erythroblastosis to missed abortion was seen in several patients. Early recognition of the disease, in the delivery room aided by studies of the cord blood, affords an excellent opportunity for prompt treatment. Histologic studies of the placenta are confirmatory. Damage to the internal organs, particularly the liver, is borne out by pathologic and physiochemical studies.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Vitamin "B" Complex Deficiency as a Cause of Retrobulbar Neuritis and Peripheral Neuritis in a Chronic Alcoholic and Pipe Smoker. B. Gottlieb. Archives of Ophthalmology, June, 1942.

The author supplies the following summary of his article:

"1. A case of retrobulbar neuritis and peripheral neuritis is described in a chronic alcoholic and pipe smoker.

"2. Tobacco was of little or no importance in the etiology.

"3. The literature is reviewed describing retrobulbar neuritis as occurring in association with other evidences of vitamin B complex deficiency.

"4. Alcoholic retrobulbar neuritis is considered to be due to vitamin B complex deficiency, probably vitamin B_1.

"5. Retrobulbar neuritis in pregnancy and some cases of retrobulbar neuritis in diabetes are probably due to vitamin B_1.

"6. Vitamin B complex deficiency, probably B_1, was the cause of the retrobulbar neuritis and peripheral neuritis in the case described.

"7. It is suggested that all cases of bilateral retrobulbar neuritis should be investigated as regards the vitamin B content in the diet, particularly if associated with evidences of pellagra, beriberi or peripheral neuritis, and treated accordingly."

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Deformities and Fractures of the Vertebrae as a Result of Senile and Presenile Osteoporosis. L. Nathanson and Alexander Lewitan. American Journal of Roentgenology and Radium Therapy, Vol. 46, pp. 197-202, August, 1941.

Six cases are presented, four females and two males, who showed evidence of deformities, compressions, and fractures of the vertebral bodies. The ages varied from forty-nine to seventy years, with all but one fifty-nine or more. All cases were carefully studied and followed over a considerable period of time and other causes than osteoporosis were eliminated.

The opinion is expressed that the condition usually occurs in persons who are debilitated and that the lower dorsal and lumbar vertebra are more commonly affected because they bear most of the body weight. In addition to the compression they often demonstrated irregularity of contour and hourglass deformities of the vertebral bodies and evidence of nucleus pulposus herniation. Calcification of the abdominal aorta was seen in three cases which was likely of no significance. It has been pointed out by Lance, Girard, and Lance that in its mildest form senile osteoporosis is likely a normal physiological involuntary mechanism.

Summary

Six cases of senile and presenile osteoporosis are presented, showing fractures, compression, and other marked deformities of one or more vertebrae. In none of these cases could the spinal pathology be accounted for by a specific disease entity. The vertebral pathology was found in each instance as an incidental finding to some other roentgenographic investigation. No pain or very little pain was referred to the spine. Vertebral collapse, associated with osteoporosis, occurs fairly frequently in senile and debilitated states and should be differentiated from cancer and other specific diseases. The diagnosis of vertebral collapse, etc., due to senile and presenile osteoporosis, as a rule, is made by elimination. The absence of pain and the presence of characteristic deformities of other vertebrae are significant.

Comment

The abstractor's observations of cases in this group would indicate that considerable pain is not an unusual symptom in these cases.

Reversible Bronchiectasis. F. G. Fleischner. American Journal of Roentgenology and Radium Therapy, Vol. 46, pp. 167-172, August, 1941.

The literature is briefly reviewed, and it is shown that as early as 1929 Ochsner pointed out that dilatation of the bronchi which has not persisted too long may return to normal following removal of the cause of the dilatation. Numerous other workers have reported similar observations.

In the course of a discussion of the mechanism by which bronchiectasis is produced the author emphasizes the fact that tissue contraction with or without time fibrosis, when it follows atelectatic collapse is easily capable of dilating the bronchi. When atelectasis clears up following the release of excessive traction and the restoration of the cushion effect of the parenchyma, the bronchi will return to their normal size as long as no irreparable damage has been done to the walls.

Is it possible to read from roentgenograms the reversibility of bronchiectasis? The author doubts whether this can be done in all cases. In the few cases he has been permitted to follow the absence of the usual saccular expansion at the ends of dilated bronchi and the "broken twig" appearance of the bronchial tree in contrast to the "leafless tree" appearance are suggestive.

Summary and Conclusions

In the most recent edition of Norris and Landis' "Diseases of the Chest," Leopold introduces the chapter on bronchiectasis with the following statement: "The use of bronchoscopy and bronchography as diagnostic procedures in the examination of the bronchial tree has revolutionized the former clinical conceptions of bronchiectasis." The reversibility of bronchiectasis in the early stages is now an established fact, which is easily derived from the pathogenesis of bronchiectasis. Adherence to traditional concepts and neologisms such as pseudobronchiectasis considerably hinders the recognition of this fact. The problem is no longer to decide whether or not bronchial dilatations are reversible, but rather to recognize these early reversible cases and provide them with suitable anti-atelectatic and respiratory gymnastic treatment in order as far as possible to avoid the well-known later severe damage.

1. A case is reported in which the development of the full clinical picture of bronchiectasis after tonsillectomy was followed by studies with lipiodol. This bronchiectasis cleared up for the most part under conservative treatment along with reversal of all the other clinical findings.

2. When the bronchiectasis returned in a more severe form a lobectomy was done. Only moderate inflammatory changes were found in the parenchyma of the resected lower lobe, the bronchi being dilated, but their walls thin and their mucosa delicate.

3. The role of atelectasis in the formation of bronchiectasis is discussed and the events in the course of reversal are inferred.

4. An attempt to predict the possible reversibility of bronchial dilatations roentgenologically is made.

Electrosurgery (Electrocoagulation, Electrodesiccation) as an Adjunct to Radiation Therapy in the Treatment of Cancer. G. E. Pfahler and David A. Sampson. American Journal of Roentgenology and Radium Therapy, Vol. 46, pp. 302-311, September, 1941.

The authors advocate the use of electrocoagulation in removing warts, moles, hyperkeratoses, superficial fissures or ulcers involving the skin, all localized patches of leukoplakia, fissures, sluggish ulcers, and papillomata or polyps involving the mucous membrane of the mouth, the nose, the vagina, the rectum, or the uterine cervix. All of these lesions may be precancerous. In a discussion of technic it is emphasized that a local anesthetic, such as novocaine, should be used, that the coagulation should always include a zone of normal tissue, that the coagulated tissue should be curetted away, and if a bleeding base remains it should be further coagulated. The application of eighty to 100 per cent of an erythema dose of X-ray or radium will make the scar soft and more pliable.

Cases illustrating the use of combined electrosurgery and irradiation in cases of leukoplakia, cancer of the tongue, cancer of the cervix, cancer of rectum, and cancer of the bladder are reported in considerable detail.

SUMMARY AND CONCLUSIONS

1. We have reviewed very briefly our experiences with electrosurgery (electrodesiccation, electrocoagulation) in conjunction with or as an adjunct to irradiation during the period from 1910 to 1940. This comprises a record of more than 2,500 cases.
2. Electrosurgery has been proved of definite value, both in the prevention and in the cure of cancer.
3. Failures from irradiation can often be transformed into success by this combination.
4. In cancer of the skin, there have been 100 per cent five-year recoveries in patients treated before the deeper structures were involved.
5. Counting all cases of cancer of the skin, including those which have involved deeper tissues (fascia, muscle, cartilage, mucous membrane or bone), the results still show 98.7 per cent five-year recoveries.
6. Small (1.5 centimeter in diameter) cancers of the lip without glandular involvement have shown ninety-nine per cent five-year recoveries.
7. The method has been found of definite value as an adjunct in the treatment of cancer of the mouth, tongue, cervix, rectum, and bladder.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
307 Doctors Building, Knoxville

Retention of Urine of Neurogenic Origin: Relief by Subcutaneous Injection of Pilocarpine Hydrochloride. Michael Scott. Journal of Urology, May, 1942.

Retention of urine caused by disease or injury of the brain or spinal cord is a problem met by every physician one time or another. The simple remedies, as heat, massage, and warm enemas, usually fail to obtain results, and one hesitates to use a catheter because of the danger of infection.

In this type of case the retention is caused by increased tone of the internal sphincter or decreased contractile power of the detrusor muscle. The subcutaneous injection of pilocarpine hydrochloride will frequently cause the patient to evacuate the bladder within five to forty-five minutes. The drug is given in one-twentieth to one-tenth grain doses. If the patient does not void within forty-five minutes, the injection is repeated. If the second dose fails to cause the patient to void, this drug is not repeated, and prostigmine or ergotamine tartrate is tried. There was no untoward reaction except a transitory period of sweating soon after the injection.

The writer reports nine cases with various types of brain or spinal cord conditions in which pilocarpine hydrochloride was used with good results.

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Volume XXXV AUGUST, 1942 No. 8

IMPERFORATE ANUS, WITH RECTOVAGINAL CLOACA—CASE REPORT*

W. C. DIXON, M.D., F.A.C.S., Nashville

Anomalies in development of the rectum and anus are rare.

The incidence as given by different investigators varies from one in 25,000 to one in 3,500 births.

Farr[1] estimates that the percentage is one in 10,000 births.

The anus may be absent, and the bowel above end as a blind pouch with no outlet.

In other cases, there may be an abnormal opening from the bowel into some other viscus.

In the female, the commonest location for such an opening is into the vagina. This opening may occur at any point in the vagina, but the commonest site is said to be in the posterior commissure.

The rectum and the genitourinary system are derived from the cloaca, which is an expansion of the hind gut. They are eventually separated by the downward growth of a partition between them, this partition finally becoming the perineum. The rectum and anus are formed by the union of the proctodeum with the gut.

Variations in this normal process of embryonic development result in different anomalies.

If there is an opening from the bowel into the vagina, obstruction does not occur, and such cases do not constitute emergencies. It is said that women with this defect have reached adult life and borne children without realizing that they had any abnormality. This is hard to understand unless there was a functioning sphincter mechanism at the site of the abnormal opening, which gave the patient continence.

David[2] thinks that sometimes this is true, and advises against transplanting the rectum in such cases.

Incontinence of feces and gas, and the results of partial obstruction, however, are usually present.

Harken[3] states that the anal sphincters are derived from mesenchyme, and are "independent in their development from the ectodermal and entodermal origins of the anus, rectum, and intestine." He believes, therefore, that in congenital malformations of the rectum and anus the sphincters are always present in their usual location.

Berman[4] also supports this view, but concludes his article with the statement that "sphincteric action may be obtained even if the hind gut is not implanted within the anal sphincter, or if this sphincter is absent."

In the case reported no sphincter could be demonstrated and this has been true in other reported cases.

Transplanting the bowel so that the external opening is at the usual site of the anus allows the levator ani muscles to surround the lower end of the rectum, and this probably accounts for the development of control in the absence of a sphincter.

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*Read before the Nashville Academy of Medicine and Davidson County Medical Society, Nashville, May 19, 1942.

When the opening between the rectum and the vagina is large enough for adequate emptying of the bowel, it is advisable to wait until the child is seven to ten years of age before operative correction is attempted. This allows a better development of the tissues involved, and children of this age are better risks than infants. In addition to this, David has seen two infants born with this defect, who have been spontaneously cured by the vagina and the rectum becoming separated with the development of a perineal body.

Stone[5] describes the Rizzoli operation for this condition as follows: "An incision is made backward in the mid-line through the posterior vaginal wall, the fourchette perineum, and skin from the edge of the rectovaginal fistula to the position that the anus would normally occupy. The rectum is detached from the vagina and drawn backward through the cleft perineum to its new position, where it is sutured to the skin. The divided perineum and posterior vaginal wall are then sutured together in front of it in order to reconstruct the normal relations. The results of this type of operation are generally described as good, but in some cases the repaired perineum has not held well and control has not been satisfactory."

This type of operation has been described and illustrated by Lynch and Hamilton.[6] Stone has described an operation which obviates some of the disadvantages of this procedure in that no incision is made through the perineum. Instead, after the bowel is dissected from the vagina and surrounding tissues, a small circular piece of skin is removed at the usual site of the anus. A pair of forceps is passed through this opening until the bowel can be reached. This opening is dilated to a size that will admit a finger. A pair of forceps is then passed through this opening and the bowel drawn down and fastened to the skin. Sutures are placed in the tissues between the rectum and vagina to build up a perineal body. This tends to anchor the bowel in its new position, and corrects a tendency for the new anal opening to approach the vaginal opening, and it also increases the function of bowel control.

The following case was operated on by the Stone technic: D. M. C., white, female, age nine.

History.—Soon after birth it was discovered that there was no anal opening at the normal location. There was a discharge of fecal material from the vagina, and examination at this time showed a small opening in the posterior commissure, from which the bowel contents came. Her mother says that the doctor in attendance did some type of local operation, the nature

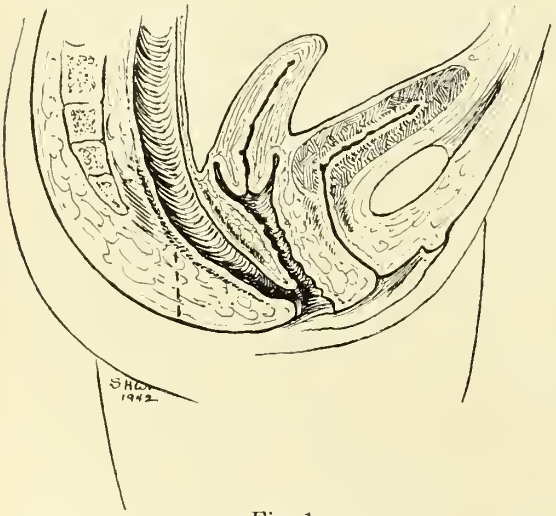

Fig. 1.
Schematic drawing showing condition present before operation.

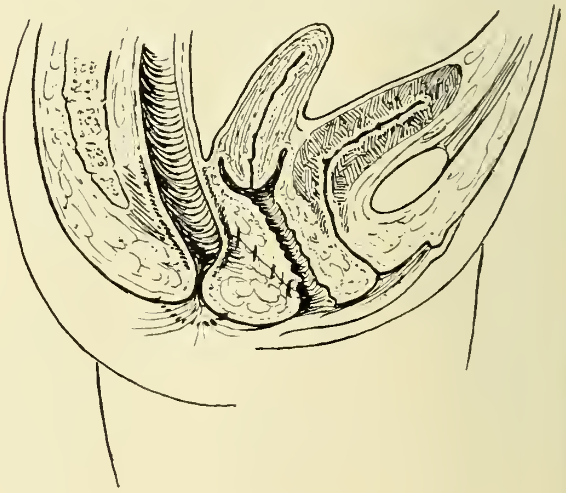

Fig. 2.
After operation.

of which she does not know. She has continued to be incontinent as to feces and gas, the discharge being practically continuous. At times, with the passage of hard feces, there is considerable pain. There is no incontinence of urine.

Past history is essentially negative.

Examination was negative except for the genitalia, which was as follows: There is no opening at the usual site of the anus. At the posterior commissure there is a small opening leading into the rectum, with feces protruding through the aperture. There is apparently no sphincter around this opening, and no evidence of a sphincter can be made out at the usual location of the anus. The vagina appears otherwise normal.

She was put on a low residue diet, and the bowel was irrigated twice a day through a male catheter.

She was operated on February 4, 1939. After closure by a suture the opening in the posterior commissure was circled by an incision, and the dissection was continued upward, separating the bowel from the vagina and the surrounding tissues until a considerable amount of rectum had been entirely freed. During the dissection a small opening was made in the lower end of the bowel, which was immediately closed. A small, round piece of skin was then removed at the normal site of the anus. A pair of hemostats was passed through this opening, and it was dilated to a size which would admit the index finger. The rectum was then pulled down through this new opening in the perineum. The skin was dissected up on either side of the wound, so that when retraction occurred it would pull the skin inward toward the newly-formed anus. The bowel was fixed in the opening by four submucous, subcutaneous sutures of chromic catgut. The contracted distal end of the bowel was cut off and the mucous membrane of the bowel sutured to the skin by interrupted black silk sutures. The wound below the vagina was closed by interrupted chromic catgut sutures plicating the levator ani around this portion of the bowel and building up a perineal body. A small tube was placed in the rectum.

Following operation she had considerable pain in spite of wet dressings, and it was necessary to use opiates for relief. On the ninth postoperative day some fecal matter was discharged and she was given an enema through a male catheter. Hot sitz baths were then used together with heat from a light. There was some infection around the wound, and it was felt that the opening inadvertently made in the lower end of the rectum contributed to this.

She left the hospital at the end of six weeks with all the feces coming through the new opening, but without any control.

There was no infection in the wound above the rectum.

A month later she re-entered the hospital.

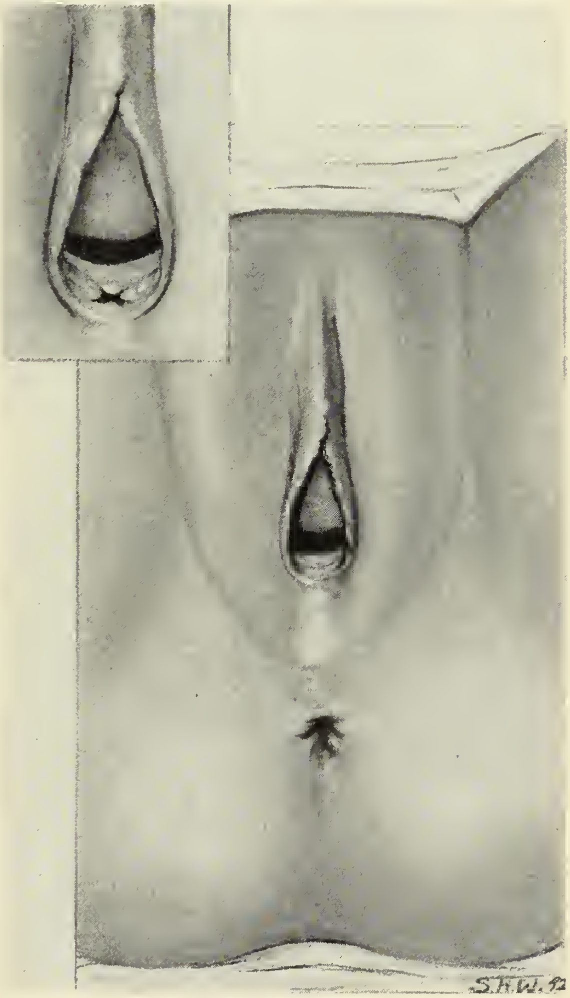

Fig. 3.

Appearance of the new rectal opening. Inset. Opening in the posterior commissure before the bowel was transplanted.

The anus had contracted until it would not admit a finger, and there was inadequate emptying of the bowel. At this time the anus was dilated and a rectal polyp was removed.

Following this, the anus was dilated at intervals, but had a marked tendency to contract.

She began to develop some control of the bowel contents by the use of the levator muscles.

She was admitted to the hospital again July 28, 1939. At this time she was having two or three painful stools a day with the aid of laxatives, and the colon could be felt through the abdominal wall, distended with feces. The anal opening was small and inadequate.

After preparation by a low residue diet and rectal irrigations, she was operated on the third time. The operation consisted in encircling the anal opening with an incision and dissecting the rectum from the surrounding tissues to a level where the lumen of the rectum seemed adequate.

The levator ani muscles were then sutured in front and behind the rectum with chromic catgut sutures. The lower end of the rectum was sutured to the subcutaneous tissues with catgut, and the margin of the mucous membrane was sutured to the skin with interrupted silk sutures. Following this, she had a smooth convalescence.

She began to have normal stools without the aid of laxatives, and the control of feces and gas improved.

She has been seen at intervals since then, when a rectal dilator has been passed.

The anus is now adequate, the bowel empties normally, and she has complete control of feces and gas.

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THE BASIC SCIENCE BILL FOR 1943

The following is the Basic Science Bill which has been approved by the Committee on Legislation and Public Policy and which will be submitted to the 1943 session of the Tennessee legislature.

This bill is essentially the same as the one which was passed at the last session of the legislature and was vetoed by the governor. The only changes have been in the caption of the bill, which had been criticized by the attorney general as not being broad enough to cover the content, and a few minor changes in wording which were thought to strengthen the bill.

The committee has high hopes that this bill will be passed by the new legislature, and has reason to believe that it will not meet the fate of its predecessor at the hands of the governor.

The passage of this bill will require the wholehearted cooperation of the profession of the state, and we feel certain that it will be forthcoming just as it was in 1940. Many officers of local societies and other individuals will be called upon in due course for help, and it is the sincere belief of the committee that we shall have the same spontaneous and enthusiastic support as was manifested in 1940.

Respectfully yours,
N. S. SHOFNER, M.D.,

Chairman, Committee on Legislation and Public Policy.

AN ACT to create a Board of Examiners in the Basic Sciences and to provide more effective requirements with respect to examinations in Basic Sciences for the practice of any of the Medical or Healing Arts; and to repeal Section 6908-6917, inclusive, of the 1932 Official Code of Tennessee, all of which sections of said Code relate to preliminary examinations for the practice of the medical or healing arts; and to provide funds for the administration of said Board.

SECTION 1. BASIC SCIENCE CERTIFICATE REQUIRED.—*Be It Enacted by the General Assembly of the State of Tennessee,* That no person shall be eligible for examination or permitted to take an examination for a license to practice the healing art or any branch thereof, or be granted any such license, unless he has presented to the licensing board, or officer empowered to issue such a license, a certificate of ability in anatomy, physiology, chemistry, bacteriology, and pathology (hereinafter referred to as the basic sciences), issued by the State Board of Examiners in the Basic Sciences.

SEC. 2. THE HEALING ART DEFINED.—*Be It Further Enacted,* That for the purpose of this Act, any license authorizing the licensee to offer or undertake to diagnose, treat, operate on, or prescribe for any human pain, injury, disease, deformity, or physical or mental condition is a license to practice the healing art.

SEC. 3. BOARD OF EXAMINERS IN THE BASIC SCIENCES.—*Be It Further Enacted,* That the Board of Examiners in the Basic Sciences shall consist of five (5) persons to be appointed by the governor. Every member shall serve until his successor is appointed and qualified. The members of the board shall be selected because of their knowledge of the basic sciences aforesaid. No member of the board shall be actively engaged in the practice of the healing art or any branch thereof. The members shall be appointed one for one (1) year, one for two (2) years, one for three (3) years, one for four (4) years, and one for five (5) years from the date of their respective appointments. Upon the expiration of the term of any member, the governor shall fill the vacancy by appointment for a term of five (5) years. Upon the death, resignation, or removal of any member, the governor shall fill the vacancy by appointment for the unexpired term.

SEC. 4. ORGANIZATION OF BOARD, ELECTION OF OFFICERS, RULES, COMPENSATION.—*Be It Further Enacted,* That the board shall meet and organize as soon as practicable after appointment. It shall have power to adopt an official seal, to elect officers, and to make such rules as it deems expedient to carry this Act into effect. The board shall keep a record of its proceedings which shall be prima facie evidence of all matters contained therein. Each member of the board shall receive ten dollars ($10.00) per diem and actual expenses, when actively engaged in the discharge of his duties. The compensation of the members and the other expenses of the board shall be paid out of the fees received from applicants. The secretary-treasurer of the board shall give such bond, running in favor of the state, as the state treasurer shall determine.

SEC. 5. FEES PAYABLE BY APPLICANTS. —*Be It Further Enacted,* That the fee for examination by the board shall be ten dollars ($10.00). The fee for re-examination within any twelve months' period as hereinafter provided shall be five dollars ($5.00), but the fee for re-examination after the expiration of twelve months shall be the same as the original fee. The fee for the issuance of a certificate by authority of reciprocity, on the basis of qualifications as determined by the proper agency of some other state, shall be five dollars ($5.00). All fees shall be paid to the board by the applicant at the time of filing application. The board shall pay all money received as fees into the state treasury to be placed in a special fund to the credit of the board. The state treasurer shall pay out of such fund all amounts for compensation and expenses of the board on vouchers signed by the secretary-treasurer of the board with the official seal of the board annexed. All expenditures of said board shall be in accordance with the general budgetary law.

SEC. 6. EXAMINATIONS.—*Be It Further Enacted,* That the board shall conduct examinations at such times and places as it deems best, having due regard to the times and places of the examinations held by the several professional examining boards authorized to issue licenses to practice the healing art in the state of Tennessee. Every applicant, except as hereinafter provided, shall be examined to determine his knowledge, ability, and skill in the basic sciences. The examinations shall be conducted in writing. No applicant shall be permitted or required to disclose in his application for examination, examination paper, or otherwise, the identity of the school or schools where he acquired his preliminary education, nor shall any such applicant be permitted or required to disclose in his application for examination, examination paper, or otherwise, the branch of the healing art which he proposes to practice. If the applicant receives a grade of seventy-five (75) per cent or more in each of the basic sciences, he shall be considered as having passed the examination. If the applicant receives less than seventy-five (75) per cent in one subject and receives seventy-five (75) per cent or more in each of the remaining subjects, he shall be allowed a re-examination at the examination ensuing upon application and the payment of the prescribed fee; but he shall be required to be re-examined in all branches. If the applicant shall receive less than seventy-five (75) per cent in more than one subject, he shall not be re-examined within the period of one year next following his original examination nor unless he presents proof satisfactory to the board of additional study in the basic sciences sufficient to justify re-examination.

SEC. 7.—*Be It Further Enacted,* That in order that no fraud or deception shall be practiced upon said board by any applicant, that the board is hereby authorized and it shall immediately upon its organization set up such system of identification of said applicants as will insure said board that the proper parties are before it at all times that no fraud or deception is practiced upon said board.

SEC. 8. REQUIREMENTS FOR CERTIFICATE. —*Be It Further Enacted,* That no certificate shall be issued by the State Board of Examiners in the Basic Sciences unless the person applying for a certificate submits evidence satisfactory to the board that (1) he is a citizen of the United States of America not less than twenty-one (21) years of age; (2) he is a person of good moral character; (3) he was graduated by an accredited high school, or school of similar grade, or possessed of educational qualifications equivalent to those required for graduation by such accredited high school before he began the study of the healing art; and (4) he has a comprehensive knowledge of the basic sciences as shown by passing the examination given by the board as by this Act required.

SEC. 9. RECIPROCITY. — *Be It Further Enacted*, That the State Board of Examiners in the Basic Sciences may in its discretion waive the examination in the basic science required by this Act when proof satisfactory to the board is submitted showing that the applicant is a citizen of the United States of America, and has passed an examination in the basic sciences before a board of examiners in the basic sciences or a board authorized to issue licenses to practice the healing art, in another state, when requirements of that state are, in the opinion of the board, not less than those provided by this Act.

The provisions of this section shall apply only to examinations conducted by the boards or officers of states that grant like exemption from examination in the basic sciences to persons granted certificates by the board created by this Act.

SEC. 10. COURT REVIEW OF ACTION OF BOARD.—*Be It Further Enacted*, That any applicant who has been denied examination by the board shall be entitled to have court review of such action of the board in the manner provided by Code Sections 9008-9018.

SEC. 11. CERTIFICATES AND LICENSES VOID.—*Be It Further Enacted*, That any basic science certificate and any license to practice the healing art or any branch thereof, which is issued contrary to this Act, shall be void. A board which has issued a license by virtue of a void basic science certificate shall revoke or cancel such license. The procedure for such revocation or cancellation shall be in accordance with the provisions of the Act, under which such license was issued for the cancellation or revocation of licenses generally. The certificate issued to any person by the State Board of Examiners in the Basic Sciences shall be automatically revoked by the revocation of any license issued to such person to practice the healing art or any branch thereof.

SEC. 12. PRACTICING WITHOUT BASIC SCIENCE CERTIFICATE FORBIDDEN.—*Be It Further Enacted*, That any person who shall practice the healing art or any branch thereof without having obtained a valid certificate from the State Board of Examiners in the Basic Sciences, except as otherwise authorized by this Act, shall be guilty of a misdemeanor and shall be fined not more than one hundred dollars ($100.00) or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case. And each day that any person shall practice the healing art or any branch thereof without first obtaining a valid certificate shall constitute a separate offense.

SEC. 13. FRAUDULENT CERTIFICATES FORBIDDEN.—*Be It Further Enacted*, That any person who shall obtain or attempt to obtain a basic science certificate by any dishonest or fraudulent means, or who shall forge, counterfeit, or fraudulently alter any such certificate shall be guilty of a misdemeanor and shall be fined not more than five hundred dollars ($500.00) or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

SEC. 14. FRAUDULENT LICENSES FORBIDDEN.—*Be It Further Enacted*, That any person, who shall obtain or attempt to obtain a license to practice the healing art or any branch thereof from any board authorized to issue any such license, without presenting to said licensing board a valid certificate issued by the State Board of Examiners in the Basic Sciences, as in this Act required, shall be guilty of a misdemeanor and shall be fined not more than five hundred dollars ($500.00) or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

SEC. 15. ISSUANCE OF FRAUDULENT LICENSES FORBIDDEN.—*Be It Further Enacted*, That any person who knowingly issues or participates in the issuance of a license to practice the healing art or any branch thereof, to any person who has not presented to the licensing board a valid certificate from the State Board of Examiners in the Basic Sciences, or to any person who has presented to such licensing board any such certificate obtained by dishonesty or fraud, or any forged or counterfeit certificate, shall be guilty of a misdemeanor and shall be fined not more than five hundred dollars ($500.00), or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

SEC. 16. FEES PAID UNAUTHORIZED PRACTITIONERS RECOVERABLE.—*Be It Further Enacted,* That any money paid out by any person as compensation for services rendered in the practice of the healing art or any branch thereof to any person not validly licensed to practice such healing art, or branch, may be recovered by the person who has paid such money by a suit instituted within two years from the date when such fee or compensation was paid.

SEC. 17. ENFORCEMENT. — *Be It Further Enacted,* That the State Board of Examiners in the Basic Sciences and the various boards authorized to issue licenses to practice the healing art or any branch thereof shall investigate any supposed violation of this Act and report to the proper district attorney general all the cases that in the judgment of such board warrant prosecution. Every sheriff and peace officer shall investigate all supposed violations of this Act and apprehend and arrest all violators thereof. It shall be the duty of the attorney general of the several districts to prosecute violations of this Act.

SEC. 18. LIST OF REGISTRANTS TO BE FILED WITH SECRETARY OF STATE.—*Be It Further Enacted,* That on or before the first day of March in each year, the secretary-treasurer of the State Board of Examiners in the Basic Sciences shall certify to the secretary of state, under the hand of the secretary-treasurer of the board, with the official seal of the board annexed, a list of all persons registered with said board for the current year, and such list shall at all times be available to the secretaries of the several examining boards authorized to issue licenses to practice the healing art or any branch thereof in this state, and a certified copy of said list shall likewise be admissible evidence in any court proceedings where such list may be material.

SEC. 19. EXCEPTIONS. — *Be It Further Enacted,* That this Act shall not be construed as applying to dentists, nurses, midwives, optometrists, chiropodists, barbers, cosmeticians, or Christian Scientists practicing within the limits of their respective callings; nor to other persons licensed to practice the healing art or any branch thereof in this state when this Act takes effect; nor to persons specifically permitted by any law pertaining to the practice of any of the healing arts to practice without licenses, practicing within the limits of the privileges thus granted them; nor to the sale, manufacture, or advertising of drugs, medicines, household remedies, chemicals, and household preparations, provided that the vendor, maker, or advertiser refrains from any attempt to diagnose.

SEC. 20. SAVING CLAUSE.—*Be It Further Enacted,* That no provision of this Act shall be construed as repealing any law in force at the time of its passage with reference to the requirements governing the issuance of licenses to practice the healing art or any branch thereof; but any board authorized to issue licenses to practice the healing art or any branch thereof shall accept certificates issued by the Board of Examiners in the Basic Sciences in lieu of examining applicants in such sciences. The unconstitutionality of any part of this Act shall not be construed as invalidating any other part thereof.

SEC. 21. SHORT TITLE.—*Be It Further Enacted,* That this Act may be cited as "Basic Science Act, 1943."

SEC. 22. CODE SECTIONS REPEALED.—*Be It Further Enacted,* That Sections 6908-6917, inclusive, of the Code of Tennessee, 1932, all of which relate to preliminary examinations for the practice of the medical or healing arts, and all other laws or parts of laws in conflict with the provisions of this Act be and the same are hereby repealed.

SEC. 23. PUBLIC WELFARE CLAUSE.—*Be It Further Enacted,* That this Act take effect from and after its passage, the public welfare requiring it.

THE SYPHILIS PROBLEM IN RELATION TO THE PRESENT EMERGENCY*

EMMETT R. HALL, M.D.,† Memphis

The examination of hundreds of thousands of men under the Selective Service System has brought to light an alarming number of physical defects resulting in the rejection of the registrant for military service. Some of the defects found are remediable and some are not. Among the defects which are remediable and for which medical science has specific drugs for cure are the venereal diseases. It should be possible by the proper application of our medical knowledge to restore to health the great majority of those men who have been rejected due to venereal disease. This paper will deal with the manner in which the practicing medical profession can collaborate with official agencies in order that this objective may be achieved.

To indicate the importance of the venereal disease problem in registrants, figures for the state of Tennessee will be given here. Of the first sixty thousand men examined in Tennessee under the Selective Service Act, over four thousand men were rejected due to syphilis alone. This represents a significant loss of man power to the military service. The potential combat power of a group this size in action in the field might play a significant role in the struggle we are faced with today. The medical profession must accept the challenge presented by the disablement of these men for military service, and must assume responsibility for their rehabilitation. It is fortunate that medical science has given us the weapons to demonstrate that this challenge can be met effectively, and the medical profession is in position to provide services in this field which should incur an everlasting debt of gratitude from the nation.

If I refer from time to time to activities carried out in Memphis, it is because most of my experiences in relation to this problem have been encountered in that city, and it is not my intention to say that others may not be doing an equally good job along the same lines elsewhere. In Memphis, an attempt has been made, through close collaboration between the medical profession, the draft boards, and the health department to put into operation procedures to meet this problem. A brief outline of these procedures will be mentioned here because they have proven very effective in this community, and it is possible that a pattern such as has been worked out here may prove effective if applied to other communities in the state. To begin with the health department has been designated as a sort of clearinghouse for all information relating to registrants with venereal disease. This was considered wise because the health department has the administrative organization and clerical staff to handle the numerous records and correspondence involved in determining and recording the treatment status of men deferred by the draft boards due to venereal disease. The draft boards here rely entirely on the health department for providing them with information as to the status of such registrants. The first blood test on registrants is taken by draft board physicians at the local draft boards. A copy of this report is routed through the health department, and an office record is made there on every registrant found to have venereal disease. The second blood test, which is required on all registrants having a positive first test, is taken by the health department, and a copy goes to the draft board for the registrant's record. The registrant is then referred for treatment to a private physician of his choice if he is able to pay for treatment or to a public clinic if he is unable to do so. The primary consideration is that he be placed under treatment as soon as possible. At the time the registrant is referred for treatment, he is placed under quarantine by the health department and advised that failure to report for treatment weekly violates this quarantine and will result in severe penalties as provided by law. The registrant is required to sign the quarantine notice as evidence that he has accepted the provisions therein.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

†Professor of Dermatology and Syphilology and Clinical Director, Venereal Disease Control Program.

When infected registrants fail to take treatment as agreed; they are warned that they will be prosecuted for violation of quarantine. If warning fails to accomplish the result desired, the health department issues a warrant for the arrest of the registrant, and he is charged with violation of quarantine either in city court or in a magistrate's court. Excellent cooperation has been obtained from the local courts whenever such charges have been pressed, and to date not a single case has failed to receive a heavy fine. As a result of these measures, registrants find out that they cannot use venereal disease as a means of evading the draft.

Returning now to consideration of the role of the private physician in this program, it should be pointed out that many of the registrants deferred due to venereal disease prefer to go and are encouraged to go to private physicians for treatment. The physician selected by the registrant is requested to report the case on the official reporting card to the health department as soon as he is placed under treatment. He is also requested to notify the health department on the official delinquent card if the registrant discontinues taking treatment before cured. Finally, the physician is requested to notify the health department when the registrant has received sufficient treatment so that he can be reclassified by the draft board for military service. Too much emphasis cannot be placed upon the importance of the physician cooperating in these three respects, for if he fails to do so, it is impossible for the draft board to obtain information as to the status of a registrant who has been deferred due to venereal disease. It is well known that there are some registrants who prefer to keep their venereal disease rather than enter military service. Such registrants will neglect treatment in order to prolong the period of cure as long as possible. If this situation is not reported to the proper authorities by the physician, he is inadvertently aiding the registrant to evade military service, a thing which no physician would intentionally do. This can best be avoided if the physician keeps close check upon the treatment status of the registrant, and warns him that there is no choice but to report him to the proper authorities if he fails to live up to his agreement to take treatment. Through the application of the above measures, registrants having venereal disease are rehabilitated in the shortest possible time.

During the present emergency, the rehabilitation of registrants with venereal disease is not the only field in which venereal disease presents a problem. The industrial worker engaged in defense work must also be protected against venereal disease if the loss of time and efficiency resulting from infection with such diseases is to be curtailed. A skilled employee in a defense industry who is incapacitated due to syphilis or gonorrhea may constitute as serious a loss of man power as that resulting from the infection of a soldier in active service. How can the protection of such employees be best accomplished? I hope I will not be taken to task if I again mention the lines along which we are working in Memphis to accomplish this purpose. Recently the Chamber of Commerce and the health department collaborated in a survey of Memphis industries to find out if they would collaborate in a program which would require blood testing of all new employees taken into their employ. Over one hundred industries were questioned and practically 100 per cent stated that they would cooperate in such a program. This, it appears, is the first and fundamental step, for unless syphilis can be found, the further steps necessary for control cannot be carried out. The plan for the Memphis industrial program is to provide industries with forms which are to be given to new employees to take to their physicians for an examination and blood test. The form has a place for the physician to indicate whether or not treatment is needed. Physicians also are requested to notify the health department on the official delinquent card if an employee stops taking treatment, as the health department has assumed responsibility for returning such patients to treatment. The object of this program, therefore, is to find cases of syphilis in industry and to see that they get adequate treatment. The successful operation of such a program through the collaboration of physicians should play an important role in eliminating one of the causes of loss of man-hours in defense industry and should reduce the incidence of syphilis in men who are recruited to the Army from industry.

While special emphasis has been placed above upon the problem of syphilis in registrants and in industrial employees, it should be kept in mind that the ultimate objective should be a community-wide campaign against these diseases. One of the disturbing things reported by the War Department is that, in spite of the fact that men with venereal disease are not accepted into the Army, the infection rate after induction has been rising and has already reached a rather alarming figure. This calls to mind the experience of the first World War, when over a third of a million of men in the American Army were infected with venereal disease, producing a staggering loss of man power to active military service. The venereal diseases have always been the leading cause of disability in our armed forces. The solution of this problem lies with civilian communities. Soldiers do not become infected with venereal disease in Army barracks. They become infected from contacts with the civilian population of communities which they visit, and there is hardly a community in the country that is not frequented by soldiers on leave from duty. The extent to which these men will become infected with venereal disease will depend upon the steps which these communities are taking to combat these diseases. This applies, of course, not only to infections acquired by soldiers, but also to infections acquired by industrial workers and others in the community. The War Department has done its best to control the civilian sources of soldiers' infections by questioning infected soldiers regarding the source of their infection. When this is obtained, a letter is sent to the health department, under whose jurisdiction the source of infection lives, giving the identity of this person in order that steps may be taken to prevent further spread from this source. The medical profession should cooperate with official agencies in investigating such sources of infection and bringing them under treatment.

Laws exist in the state of Tennessee which give health officers the authority to require an examination of any person reasonably suspected of having a venereal disease. Health departments should take an aggressive stand in seeking out these individuals who are spreading venereal disease in the community, for only by doing so will the disease ever be brought under control. Physicians, on the other hand, should feel a sense of responsibility in this regard and should inquire into the source of infection of newly-acquired cases of venereal disease that come to their attention. A report of these sources of infection should be made to the health department on a special card provided for this purpose. The name of the informant does not have to be mentioned, but if it is given, it is kept strictly confidential during the investigation. It should be emphasied again that the only logical means of protecting soldiers, industrial workers, and others in the community from infection with venereal disease is by attempting to discover the sources of infection of cases coming to the attention of physicians, and reporting this information to the proper authority for action to be taken, for only by doing this can the vicious circle of spread be broken into.

Mention should be made of another important source of infection of soldiers, industrial workers, and others. That is prostitution. There are some who look upon prostitution as a necessary evil which cannot be eliminated. There are some who think that it can be controlled by such procedures as segregation or medical supervision. These are fallacies. It has been demonstrated time and again that there can be no compromise with prostitution. If prostitution is condoned, it is encouraged; and those who tolerate prostitution promote the conditions which facilitate the entrance of young girls into this profession, and also encourage the many vices which always go hand-in-hand with prostitution. There are many medical societies in the country who have adopted a firm stand on this problem and have passed resolutions requesting the authorities to suppress prostitution with every means available. This is the only logical attitude for the profession to take. Two years ago Memphis police authorities decided that prostitution must go in Memphis and conducted a vigorous campaign against it. Many people laughed at this program and thought that it was only a temporary cleanup campaign. However, they were proved to be mistaken. Continuous vigilance has been practiced by the police department in Memphis during the past two years, and investigators from outside of the state report that Memphis has the cleanest record in this regard of any city in the United States. Memphis has frequently been used as a model in this respect, and it proves that something can be done with regard to this problem. I believe that this cleanup of vice conditions is directly responsible for Memphis having the lowest syphilis rate among white registrants of any city in Tennessee. It is a source of satisfaction to us to feel that soldiers visiting Memphis are not exposed to the vice conditions which they encounter in many other cities which they visit.

Memphis has been fortunate enough in having steps taken by its own authorities to combat the problem of prostitution. For those communities where authorities refuse to take up the challenge, a federal law, the May Bill, can be invoked. When this bill is invoked in a community, the control of prostitution becomes the responsibility of the F. B. I. It is remarkable that, although it has been some time since the May Bill was passed, it has as yet never been invoked in any community in the United States. Is this due to the fact that prostitution is no longer a problem or that certain authorities do not have the courage to invoke this act?

In résumé, one cannot help being impressed by the array of weapons which we have to combat the problem of venereal disease at the present time. We have the drugs, which in Tennessee are made available to physicians without cost. We have the necessary legal measures in this state to require infected individuals to take treatment, and we have health organizations with the authority and personnel to investigate individuals who are spreading venereal disease in the community. If local authority is timid about taking up the challenge of prostitution, we can call upon the invocation of the May Bill to meet this situation. Surely the medical profession should demand that all of these weapons be put to their best use. The venereal disease problem which faces us cannot be solved by the medical profession alone. It cannot be solved by official agencies alone. But there is great promise of a solution to this problem if the medical profession and official agencies will collaborate in the common cause of venereal disease control, a program which will do much for the conservation of the health of our man power in the struggle we are now engaged in.

DISCUSSION

DR. R. H. KAMPMEIER (Nashville): The subject covered by Doctor Hall is very timely, and, as he has indicated, the treatment of the syphilitic draft registrant and his return to availability for service rests upon the shoulders of the medical profession. Apparently the organization for treatment and "follow-up" of infected registrants has been well worked out in Memphis. However, the Memphis scheme must be modified for rural counties with organized health departments, and is not at all applicable to counties lacking organized public health facilities.

At Vanderbilt University Hospital I am in the same position as the private physician, since I can merely report the recalcitrant patient. One of our staff, Dr. William Frye, conducts the Davidson County Venereal Disease Clinic. His territory includes the whole county, exclusive of the city of Nashville, and his problem is comparable to that of county health officers in general. He handles the problem of syphilitic registrants somewhat in the following manner. The registrant found to have a positive blood on first examination is reported to the county health department. He is requested to report here for a second blood test. If this is positive, he is asked to take or continue treatment with his private physician, or to do so in the clinic. His physician is called and informed that he is to keep the patient under treatment and to report any delinquency. In addition, the physician is canvassed every two months regarding such patients. A delinquent registrant is reported to his draft board, which returns the patient to the county clinic. In most of these cases the physician is usually glad to sign a request that the county health department assume responsibility for treatment and "follow-up." Doctor Frye has found that a visit to each draft board with a discussion of problems of treatment has resulted in splendid cooperation in returning men for treatment.

Every physician wishes to contribute his part to the war effort and does not wish to abet registrants in avoiding service. How can the rural physician in counties without health departments keep the men under treatment? In general, draft boards no doubt will cooperate if the treatment problem is understood. A draft board summons is more effective than one from the doctor. Thus the draft board can best "follow-up" the delinquent patient. For the man who chronically lapses treatment Doctor Frye has found that, if he must report weekly to the draft board after treatment, he becomes regular. This also answers employers' objections to reporting for treatment.

Some problems which have worried all of us with regard to registrants need clarification. Draft boards have been known to reclassify registrants into 1-A as soon as a negative blood test is found. If an early syphilitic is inducted without provisions being made to complete treatment in the Army, the result may be disastrous. Reclassification should be postponed until treatment has been completed. Serologic-fastness after treatment is acquired, and congenital syphilis has kept men out of the draft unnecessarily. I believe a negative spinal fluid should be a requisite for induction of syphilitic draftees. Just last week we had a patient at Vanderbilt University Hospital who had been inducted into the Army with the National Guard. He had been treated in the past for syphilis and had a negative Kahn test, though his blood Wassermann was positive. He was recently discharged because of dependents. Shortly after his return to Nashville he had a few convulsive seizures. Spinal fluid shows evidence of active neurosyphilis, being of a Grade III type. His pupils are fixed to light.

Lastly, I wish to make a plea for the continuation of educational efforts regarding venereal disease control. Though we may now force individuals to take treatment, and oust prostitutes from cities, we must admit that when the emergency is over these steps will lose their momentum. The long-range control in civil life must rest upon widespread education with respect to the methods of spread and the treatment of syphilis and other venereal diseases.

DR. A. H. LANCASTER (Knoxville): Mr. Chairman: Doctor Hall has called our attention to a very important subject. It is interesting to learn of the program that has been carried out in Memphis, for I do not think that we have done so well in other sections of the state. In Knoxville I think that the Knox County Medical Society and the public health department have cooperated with the draft boards as well as they have in Memphis, but we have not obtained the cooperation that we should have received from the industrial organizations and the Chamber of Commerce. When we consider that seven per cent of the selectees are rejected because of a positive Wassermann, the syphilis situation becomes an emergency. Though it is pleasing to those of us from Knoxville to note that we have about one-third the incidence of syphilis that is reported in Memphis, Nashville, or Chattanooga, it is alarming to note the high incidence of syphilis in the larger counties of the state. This comparatively low incidence of syphilis in Knoxville can be partially explained by the fact that we do not have as many colored people as do the other large cities of the state, but, on the other hand, our health department serves both the colored and the white alike. This seven per cent of the selectees with syphilis must be treated. The treatment of these infected selectees cannot be done effectively, with them being drafted into the service without delay, unless we adopt the five-day or massive-dose method. If the five-day treatment is given in the early cases, we may expect to have these men ready for service in a short time, but if we do not, the same thing will happen to many of them that happened to the case Doctor Kampmeier reported.

We have had in Knoxville for a number of years a well-conducted therapeutic clinic. Now, if we can get a program that will call for the cooperation of a number of agencies, then we may expect to reduce the incidence of syphilis. I believe that the following groups could do a great deal to reduce the incidence of syphilis: the medical profession, the public health department, the industrial and civic organizations, and the legal profession in creating legislation to stop drugstore prescribing. I learned from a reliable source that one drugstore in Knoxville last year prescribed for as many cases of venereal diseases as any one doctor, and I have reason to believe that drugstores over the entire state do likewise. Marriage laws should be more restrictive, for we have many people in East Tennessee with positive Wassermanns who go to Georgia to be married and come back to Tennessee to live; these people do not see the necessity for taking an extended course of treatment before they are married. Doctor Hall tells me the same thing happens here in Memphis, for couples can go over into Arkansas and be married without a health certificate.

There is one major problem which confronts us, always has confronted us, and, in my opinion, always will confront us—that is prostitution. In view of this fact, if we expect to reduce the incidence of syphilis materially, we must not rely entirely upon the hope of abolishing prostitution. We have always had both public and clandestine prostitution, and if we abolish one, it is apt to be at the expense of the other. Do not misunderstand me—I am not advocating the open house. Should we make a careful study, I expect that we would find that possibly seven out of ten of the cases of syphilis are from the source of clandestine prostitution. The sex urge is man's strongest instinct, and we are not apt to have laws that will suppress it, and only through a process of education and laws that will force these people to take examinations and be treated may we expect to curb it. For example, there should, perhaps, be a rigid law that would force anyone found guilty of prostitution, whether male or female, to have a blood Wassermann every two weeks for twelve months. This would, on the one hand, be a way of finding syphilis, and, on the other hand, be a way of calling attention to the dangers of prostitution. One of the doctors on the train last night told me that one of his patients, who was a prostitute, told him that she had accommodated as many as thirty men from Camp Forrest in a single twenty-four-hour period, and that she had one girl working for her who accommodated as many as fifty men in twenty-four hours. This fact possibly explains the high incidence of syphilis in some of the selectees after they are already inducted into the Army. If my memory serves me correctly, a few weeks ago I heard one of the physicians from Camp Forrest say that the incidence of venereal disease in that camp last year was seventy-one per 1,000 men. This condition cripples defense measures.

The medical profession has diagnostic procedures with which to detect syphilis, and we believe it has therapeutic agencies with which to treat this disease; so, if we can obtain the cooperation of other agencies, we may expect a marked reduction in the incidence of syphilis in Tennessee in the next ten or fifteen years. Every physician interested in the control of syphilis should familiarize himself with the program that has been so effective in Denmark the past twenty years. Because of the high incidence of syphilis in Denmark immediately following World War I, this little country instituted such an effective syphilis control program that previous to World War II the medical institutions had difficulty in obtaining early cases for teaching purposes.

DR. W. S. NASH (Knoxville): Gentlemen, I am decidedly of the opinion that the United States Army, through Doctor Parran and his associates, is all wet when it comes to the treatment of venereal disease. I am now an old man in the beginning of a third war. I went all through the Spanish-American War, I went all through the first World War, and now I am in the third war, and I see but little improvement, if any at all, in the venereal situation; probably I see none.

I take it that, if we did not have prostitution, we would not have the incidence that we are now suffering from, and if we did not have the automobile, we would not have one-fourth the incidence we are now suffering from. I am of the opinion, further, that if Doctor Parran and his officers and coworkers would take men into the service who have a simple, uncomplicated gonorrhea and form them into labor battalions, you would have virtually solved the gonorrheal question. There is but one condition that I can think of that is not applicable to such treatment, and that is organic stricture caused by long-delayed treatment of gonorrhea. The same thing is true of syphilis. You can make men innocuous in a very short time so far as contamination is concerned. If they can be made innocuous in a short time, why not take those men into the service?

Cerebrospinal syphilis even at this late date is not satisfactorily treated by any method that is known to the profession, but if it is in the blood alone and not in the membranes or the spinal nervous system, you can offer reasonable assurance of noninfection.

I do not think a man should be deferred from Army service because he has gonorrhea. Two weeks' time ought to clear it up. There is no reason why it should not be cleared up in that length of time.

I may be looking too hopefully upon the thing, but those things, you must understand, gentlemen, are based upon experience. I have had a lot of experience along that line. I never knew a man who regularly took his treatment of salvarsan and neosalvarsan and tryparsamide and all the arsenical preparations with the heavier metals to go out and infect anybody else. They are innocuous so far as the other fellow is concerned. Why not put them in the service? If you do not want them in the front line, let the poor devils work in a labor battalion. They make very good latrine workers, and I think that is where they belong. I was a major in the last World War, and when I found those conditions arising—and they always arose in camp—I gave them latrine service, and it seemed to work beautifully. They did not object any longer to taking a shot of salvarsan or neosalvarsan or heavy metal, they took it beautifully. The same thing is true of gonorrhea. If you put them into heavy service, humiliating service, if you please, they will come up and take their sulfathiazole and their other treatment very readily.

So far as the prostitute habit is concerned, I am not able to state. We have had prostitution with us from time immemorial, and it is like poverty, it will always be upon us. It is the strongest impulse in the human race, and we cannot hope to get rid of it that way. The only way you can ever get rid of it is by education. It has no other solution. Warn people of its dangers and offer them the proper educational facilities, and I think you will largely reduce—though not wholly—infection from prostitution.

DR. R. H. HUTCHESON (Franklin): I am very glad to hear this paper read by Doctor Hall before the Medical Society of Tennessee. It is indicative of the need for close cooperation between public health workers, private practitioners, and the military. In certain areas the various groups are cooperating to the fullest extent. In other areas it is not of a type that will expedite a solution to our problem.

Today we are discussing particularly the venereal disease question as it applies to the soldiers and sailors, but we must remember that it is not only the soldier and sailor that is being infected with venereal disease. This is a rather important fact to keep in mind. The men of the armed forces are under close supervision. They receive regular examinations to determine if they are infected, and we have been told that the number found to be infected is large. This being true, how many people in the civilian population are being infected, people who do not know, people who have not been told or at least have not been told in terms that they are able to understand the dangers of venereal disease infection. The prevalence of the venereal diseases cannot be questioned.

I am certain that there is a great deal more venereal disease than is being called to the attention of the authorities charged with the responsibility of suppressing the spread of these diseases.

I know from observation in those counties and cities of the state that have full-time public health service that venereal disease is reported by private physicians directly in proportion to the local full-time health department's venereal disease control activity. The progressive physician will report his cases to a progressive health department. He is not interested in reporting cases for the pleasure he may get out of filling out a report card. He wants something done about the cases that discontinue treatment, and if the health officer does not do something to help him stop the spread of the disease and assist in keeping the case under continuous treatment, sooner or later the physician will cease to report his cases, and I cannot blame him. I believe I would do the same thing.

The various county and district medical societies of Tennessee can do more to control venereal disease than can be done by any agency or collection of agencies within the state. There are but two things that must be done. First, see that the physicians report their venereal disease patients as venereal disease cases, and refer to the venereal disease clinic those cases unable to pay for private treatment and report your private patients who discontinue treatment without permission.

Second, give the local health department your full support and then, if the program fails, the fault is that of the director of the local department. If he does not discharge his responsibility, it is your duty either individually or as a society to report this direct to your State Commissioner of Public Health, or, if you prefer, through your state association to him. Such reports will receive prompt attention.

We have the drugs with which to work; therefore close follow-up of reported cases and continuous treatment of those cases, if gotten early, will stop the spread of venereal disease. Is there any reason why it should not be done?

DR. JOSEPH T. NARDO (Somerville): I would like to introduce two cases that happened in Fayette County Health Department in relation to the treatment of Selective Service registrants. We had treated the first registrant prior to his being examined by the Army board; he had his full course of twenty and twenty. He was noninfectious in February, and about that time he had two blood tests and they were both positive, therefore the Army had turned him down. I had included in his induction papers a letter to the effect that he had been treated by our department. The Selective Service Board sent this individual to the induction camp. He was sent back with the notation that he should have had two negatives before being referred to the induction camp. While there in April the Army camp took one blood test and it was negative. I do not know why they did not take another test while he was at the camp.

The following case answers this question: Will the Army treat patients with syphilis that they know existed outside and are just entering the service? This second patient, a white male, aged twenty-four, had been treated for syphilis. He had a primary lesion in November, and he had been given ten arsenical treatments and then was reported to the draft board, or rather, the draft board gave him orders to be examined, and he had a negative blood test and was sent into the Army. By the way, I also gave him a letter to be presented to the draft board and to the Army examining board that he had a primary lesion and was being treated at present for syphilis, but this individual wanted to go in the Army, and did not present my letter to the officials. He was inducted into the Army camp. After he got into the Army service, he presented my letter to the medical officer, and I was surprised to find that they are treating him in camp instead of sending him back. The captain wrote to me and asked me just how much treatment he had had, and they wrote that they were going to continue the treatment.

I believe we are confronted with a problem where an individual wants to get into the Army. We can give him a written notice, and when he gets in the service and is inducted, he can present his paper stating that he is infected, and treatment will be continued. I have found out from our health department that if they do not have two negatives, they will not be taken in the Army. We are going to have some cases where we will not be able to get two negatives.

These two examples show that the one who was rendered noninfectious by the routine treatment of twenty and twenty was turned down because his last two blood tests were not negative, and the other individual who had a primary lesion with only ten arsenicals was taken in because he had one negative.

DR. E. R. HALL (closing): I would like to thank the gentlemen for their discussions. This paper is a plea for alertness and cooperation of the various agencies in order that we may render the best service to the public and to our country.

THE TREATMENT OF COMPOUND FRACTURES UNDER WAR CONDITIONS*

E. DUNBAR NEWELL, M.D., Lieutenant Colonel, Medical Reserve Corps, Inactive, Chattanooga

The report of the Surgeon General of the United States Army for 1927 shows that 80.31 per cent of the fractures following gunshot wounds in War I were compound. The death rate from compound fractures was 17.53 per cent. In our clinic we have treated during the past twenty-two years ending January 1, 1942, 8,589 fractures, of which 420 were compound.

Doctor Livingston reports on the results in compound fractures with osteomyelitis as experienced by the Veterans Administration over the past twenty years as follows: 18,435 cases of compound fracture were seen; 4,053 had osteomyelitis; 10,505 developed either ankylosis, shortening, deformity, nonunion, faulty union, nerve involvement, etc. In his conclusion, Doctor Livingston says:

"1. Eighty and thirty-one hundredths per cent of battle fractures were compound; nearly one-half of all discharges, nearly one-third of all days lost, and one-fifth of all deaths were the result of fractures.

"2. About one-half of all compound fractures required more than five years before becoming stationary.

"3. Seven years after World War I the majority of compound fracture cases were compensable from ten per cent to fifty per cent, with a smaller but still large number from fifty per cent to one hundred per cent."

I cannot imagine more awe-inspiring and startling figures than these taken from official government records, which shows us that we must realize that the treatment given the American soldier in World War I was very poor compared to the treatment he received in civil life in grade A hospitals. Although the confusion incident to nearness to battle fronts and the impossibility of getting the wounded to the operating room for from twelve to seventy-two hours after the injury was received were the principal reasons for the high mortality and the astounding number of grave complications, there were other factors that should not exist in World War II. To be frank, I mean that many of the surgeons who operated on these American soldiers were not trained to properly care for compound fractures, and, consequently, were incompetent to handle such a formidable and important surgical procedure.

My object in reading this paper before this society at this time is to encourage interest in the profession to study the recent literature on the treatment of compound fractures and to urge those who are likely to be called into service to haunt the best hospitals and watch the surgeons who are operating in this class of surgery to become at least familiar with the proper technic of handling compound fractures.

There are, of course, as always, some differences of opinion as to all the factors in handling compound fractures, but no difference of opinion as to many of the procedures.

1. We all agree that the fractured limb should be immobilized with fixed traction immediately after the injury. This immobilization greatly lessens shock. It is believed by many surgeons and physiologists that the absorption of the products of traumatized muscles produces shock. Certainly I have many times noticed that a patient brought to the clinic without an immobilizing splint would be in shock, and as soon as the limb was immobilized with splint and traction the pulse would improve. Often I have seen such patients that are placed on the operating table in shock come from the operating room in far less shock, notwithstanding the anesthetic and the operation, after adequate immobilization.

2. The earlier the operation after the injury is received, the less liability to infection of the wound. Within the first six hours after the wound has been contaminated it is rare to have infection, if the wound has been treated by an experienced and competent surgeon. However, when the wound has been grossly contaminated by soil and particles of clothing, it is far safer to operate within two to three

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

hours following injury, if such is possible. All surgeons agree with this.

3. *Shock and Hemorrhage.*—The best treatment for shock is immobilization of the fracture and relief of pain with morphine. If shock continues following this, blood transfusions, liquid plasma, or moderate amounts of saline solution with high dextrose content should be given. The patient should be treated for shock while preparing for operation. In compound fractures, hemorrhage is usually easily controlled by dry gauze pressed into the wound. Do not use a tourniquet if bleeding can be controlled by dry pack. However, if it is necessary to use a tourniquet, it should never be kept on for more than thirty minutes without releasing. Sometimes the tourniquet is indicated.

4. *Cleansing the Wound.*—There is some difference of opinion with regard to the cleansing of the wound, but not a great deal after all. The open wound should be packed with dry gauze as soon as the patient comes under the care of the surgeon. Cleanse the skin with benzine, ether, alcohol, or soap and water, as is desired. When dry, paint the skin with tincture of iodine. All soiled linens should then be removed, and the patient redraped. Fresh instruments and fresh gloves are necessary to begin the cleansing of the wound. I have always used tincture of green soap and water, exploring every cavity through an enlarged incision and removing dirt and foreign particles at this time. Many excellent surgeons do not use tincture of green soap, preferring neutral soap or a solution of white soap. Many also depend on sterile water as a cleansing agent—some use it by the quart and some by the gallon. I have used tincture of green soap and water in all contaminated fresh wounds for fifteen years—no other antiseptic, if it is an antiseptic in such dilution —and I am pleased with its efficiency.

5. *The Debridement.*—I learned to do debridement in the evacuation hospitals in France, and I still feel that it is a very important detail in the treatment of compound fractures. The technic consists of removing a thin edge of the contaminated skin with a sharp knife, searching for foreign bodies, following the course of the missile, which is always present and can be found, removing all unattached pieces of bone if not too large, removing definitely dead tissue, removing dead or traumatized muscle that does not bleed or contract when pinched. Then, carefully ligate all bleeding vessels with the smallest of catgut. After the debridement has been completed, the broken ends of bone may be apposed with or without the aid of traction.

6. *Immobilization of Fracture and Aftercare of Wound.*—In civil practice, many good surgeons plate, screw, or wire the fracture, sprinkle the wound with large quantities of sulfanilamide and/or sulfathiazole, or both, and close the wound. This is the simplest and easiest way to treat such fractures, but may not be the safest. I have closed many compound fractures and have not had a death or amputation due to infection. To close a compound fracture, the surgeon must have had unusual experience and skill in this work and he must be the one to do the cleansing and the debridement, and must be the one who will see the case daily. The great majority of the best surgeons in the United States who do this work do not think these wounds should ever be closed primarily.

Dr. Robert H. Kennedy of New York, chairman of the Fracture Committee of the American College of Surgeons, in a paper read before the American Surgical Association, April, 1941, strongly condemns closing these wounds. Dr. William Darrach of New York, in discussing this paper, says:

"I agree with Doctor Kennedy on wound closure, and I want to emphasize the point that no matter how high the percentage of primary closures people are getting away with, it is unnecessary and an unwise risk because the one case in fifty or twenty-five or 100 of primary closure that goes bad is so very bad that you will wish you had not done it. It results not only in spreading infection, but in sepsis, amputation, and sometimes death. This can be avoided, if you do not add insult to injury, by adding tension to your spreading infection."

Doctor Kennedy, in closing the discussion, says:

"I wish to thank Doctor Key particularly, with whose theories I disagree absolutely.

In discussing this problem, I cannot help thinking of the presentation of the late Doctor Connors some years ago, in which he compared groups of compound fractures which were closed by primary suture and a group in which they were left open. The number of infections at that time was slightly greater in the group which were left open. There were no amputations and no deaths. There were slightly fewer infections in the group which were closed by primary suture, but there were several amputations and several deaths. That is enough to answer the problem for me."

Colonel Norman T. Kirk, chief of Surgical Service, Walter Reed General Hospital, Washington, D. C., says:

"Primary closure of wound after debridement was banned by order during World War I because severe infection often followed it. Even with the advantages of the new chemotherapeutic drugs, primary closure is considered hazardous. All surgeons agree, I think, that thorough debridement is indicated, but there is considerable disagreement over what should follow this in the handling of compound fractures."

Personally, I feel that no compound fracture received during battle should be closed, and very few should be closed in civil life unless done by experts of long experience.

If immobilization is not done by internal fixation, then we must use traction, either skin or skeletal, with the limb in a modified Thomas splint, with the limb suspended or skin plaster without padding, except over os calcis tendon achilles or rim of pelvis. Sometimes, traction alone is not sufficient to hold the fracture ends in good apposition, and then we can use pins above and below the site of the fracture and fasten them to the side of the Thomas splint, or incorporate them into the plaster cast. Perfect immobilization prevents infection, lessens pain, hastens osteogenesis, and should be fought for.

Doctor Trueta, chief of Surgical Service of the Catalonia Hospital, in Spain, during the last Spanish War, after performing debridement, reduced the fracture on an orthopedic table, packed the intermuscular spaces with plain gauze and then applied skintight plaster casing. Doctor Trueta reported that 1,073 patients were given this treatment in his hospital. In only eight of these cases did he have to remove the encasement because of infection, and gas infection occurred in one case only. He stated that approximately 10,000 wounded treated by the closed method survived the retreat from Caledonia and arrived in France.

Quoting further from Doctor Kirk, he says:

"Arnaud and associates, in February and March, 1939, observed 2,000 of these wounded, 600 of whom had been treated by the closed method from fifteen days to six months prior to their observation. Patients with gas infection naturally would not have survived. The surgeons found that soft tissue wounds had healed satisfactorily. Fifty per cent of the compound fractures showed mediocre results. Malunion and nonunion, with overriding of fragments, deformities, excessive callus, and multiple sequestra were the rule."

Orr uses the same method except he packs the wound with vaselinized gauze and applies skintight plaster. No dressings are done from two to four weeks if the patient is doing well. Personally, I prefer the vaselinized gauze to the dry gauze.

Dr. Philip D. Wilson of New York, surgeon to the American Hospital in Britain, says:

"Primary closure of the wound is still a matter of debate among English surgeons, but, except in the case of small wounds that are seen within six hours of injury and can be cleanly excised, general opinion is opposed to it, particularly when it is likely that the patient will have to be evacuated to another hospital.

"The reduction of the fracture was accomplished generally by manual or skeletal traction and immobilization obtained by the application of plaster of Paris encasements. In the case of fractures of the lower extremity, a Steinmann pin through the os calcis was frequently incorporated in the plaster, and in some cases a second pin was inserted through the upper end of the tibia and incorporated in the plaster. This method of reduction and fixation was satisfactory in fractures of the bones of the lower leg, but was quite unsatisfactory in the case of the femur. About half of the fractures of the femur reaching us were immobilized in Thomas splints, either with adhesive skin traction or a pin through the os calcis. The fractures of the upper extremity were immobilized in plaster of Paris.

"The Orr-Trueta method of treatment has taken a firm hold in England and is being widely used. In my opinion, as well as that of many British surgeons of much greater experience, it represents a great advance in the treatment of compound fractures resulting from enemy projectiles over the methods used in the last war."

Dr. John J. Moorhead of New York, in "Surgical Experience at Pearl Harbor," says:

"I had arrived in Honolulu on December 3 at the invitation of the Honolulu Medical Society to give a course of lectures on 'Traumatic Surgery.' By a strange coincidence the second lecture was entitled 'Treatment of Wounds, Civil and Military,' and this was given on Friday night, December 5, approximately thirty-six hours before the attack. An audience of about three hundred attended, and a large proportion represented the Army and Navy medical personnel. At this lecture, virtually a rehearsal, stress was placed on early adequate cleansing of wounds by soap and water, followed by debridement to fulfill the three criteria of (1) obtaining normal color, (2) bleeding, and (3) muscle contraction—all these to be attained by nonsacrificial exsection of any involved tissues. Thereafter absolute hemostasis was advised, to be followed by placing in the wound an adequate amount of a sulfonamide drug, either sulfanilamide or sulfathiazole. No wounds were to be sutured, but instead left wide open or to have nonabsorbable interrupted sutures placed, but not tied until the third day if all went well (primosecondary suture). Heavy plain gauze dressings were to be applied, and splintage added if joints were contiguous. As part of the aftercare fifteen grains (one gram) of a sulfonamide drug was to be given every four hours for three days, together with needed sedation.

"Fractures were mainly of the extremities, often multiple and practically all grossly compounded, with retained metallic foreign bodies and debris. Debridement was done as for any wound and splintage was in a Thomas arm or leg splint, with or without skeletal traction by transosseous wire. No plates were inserted; a few fractures were encircled with stainless steel wire. Plaster of Paris casings were occasionally used when the compounding was not severe; otherwise encirclement was purposely not advised.

"*In every case of gas gangrene the wound had been too tightly sutured despite advice to the contrary.*"

Under comments Doctor Moorhead says:

"1. A very large number of seriously wounded arrived at a military hospital within a period of five hours.

"2. The postoperative mortality was 3.8 per cent.

"3. No deaths resulted from gas gangrene.

"4. Purulent discharge was almost absent.

"5. The results were better than I ever had seen during nineteen months in France when serving with the French, Belgian, and American medical formations.

"Our greatest defect was inability to give better preoperative shock treatment to a larger number of the seriously wounded."

We have treated at the Newell and Newell Clinic during the past twenty-two years, ending January 1, 1942, 8,589 fractures, among which were 420 compound fractures of all kinds.

DISCUSSION

DR. DUNCAN EVE, JR. (Nashville): Mr. Chairman and members of the Tennessee State Medical Society: I have enjoyed Doctor Newell's paper on compound fractures very much indeed. I should like to emphasize, as Doctor Newell has, that the new chemotherapeutic agents cannot replace good surgical technic, but can greatly supplement it. In the days before the sulfonamides, we could anticipate a primary healing of contaminated wounds seen during the first few hours in about ninety per cent. Now, with the use of the sulfonamides, we should approximate 100 per cent.

Contaminated Wounds.—In the past, twelve hours has been considered the arbitrary time it takes for a contaminated wound to become infected if left alone. Now that the sulfonamides are being introduced into the wounds of soldiers shortly after the receipt of the injury, the period of contamination may be prolonged, so that wounds of longer duration may be still treated as contaminated wounds.

In the treatment of any patient, we feel that the case should be individualized; however, we believe the following principles usually are applicable in compound fractures:

1. All wounds which are not grossly infected should be cleansed as contaminated wounds, even though more than twelve hours have elapsed since the injury.

2. The wounds should usually be enlarged in order to insure adequate cleansing of the depths of the wound. .

3. Debridement should be carefully done with sterile water and green soap, so that at the end of the procedure no gross dirt, foreign bodies, or nonviable tissue remains. The bone edges should be scraped if dirty.

4. The wound should be irrigated with at least 3,000 to 4,000 cubic centimeters of sterile water or saline after the debridement is completed.

5. Complete hemostasis is essential.

6. Internal fixation is easily accomplished by approximating the fragments with stainless steel through small drill holes, and should be done if there is any difficulty in maintaining reduction.

7. Drains should not be used in wounds which have been adequately cleansed. In questionable wounds, it is advisable to place retention sutures which can be tied in forty-eight to seventy-two hours if there is no evidence of infection. This is the procedure being used by the Army and Navy now.

8. Chemotherapy should certainly be used locally. The question of which drug is to be used, and how is the best way to use, is still controversial. Recent experiments, however, have shown that sulfathiazole is much more effective against the gas bacillus and staphylococcus than sulfanilamide. When the sulfathiazole is put into suspension either in the tissue juices or in a small amount of saline or distilled water, there is no caking or reaction of the tissue to it.

We have used sulfathiazole exclusively for the past nine months, and have found it most effective. We have not given additional sulfathiazole by mouth or intravenously, unless the wound was infected or borderline at the time of the initial treatment.

9. Immobilization should, of course, be effected, the plaster cast usually being the method of choice. We cut out the cast only if there is evidence of infection, or to do a secondary closure.

10. Naturally antitoxin serum and gas serum should be used.

DR. E. DUNBAR NEWELL (closing): I remember a good many years ago I was at Atlanta attending my first meeting of the Southern Surgical Association, and Doctor Crile had read a paper and Doctor Ochsner had discussed it, and no one else would discuss the paper at all, much to my surprise, because I had been so accustomed to many discussions at my local society and at the Tennessee Society. Doctor Haggard was sitting by me and I said: "Why in the world doesn't somebody discuss those papers?"

He said: "Don't you agree with what they say?"

I said: "Yes."

He said: "Evidently all the others agree too or they would discuss them."

So I take it you all agree with me or you would discuss this paper.

I want to thank Doctor Eve for his discussion. Of course, there are many things that I could have brought out, but I do think the most important thing in the treatment of compound fractures is to learn how to treat them, and I think it is a crime to treat these American soldiers incompetently when they have compound fractures if it is possible to get a competent doctor to treat them, because the statistics of the last war were horrible, there is no question about that, and they were horrible principally for the reason that we could not get them back fast enough; secondly, there were so many treated by men who were not competent to treat them, and so you men who are going into the service and have to treat these fractures, learn how to treat them before you get where you have an opportunity to treat them, because if these cases are properly treated, I do not see any reason why we should not have a mortality of not more than five to ten per cent, even in war conditions.

THE INTERNIST'S PROBLEM OF LOW-BACK PAIN*

HENRY B. GOTTEN, M.D., Memphis

It has not been many years since the diagnosis of low-back pain was nothing more than a differentiation between kidney trouble and sacroiliac strain. Indeed, it did not make a great deal of difference, for, if the urine was negative, the patient's back was strapped, and, if it was positive, he was given a urinary antiseptic. In the last few years our interest and information about low-back pain have increased and with it we have the perplexing problem of diagnosis. While to a great extent backache is an orthopedic problem, it is by no means entirely so. The gynecologist, the proctologist, the otolaryngologist, the neurosurgeon, and finally the internist may claim a share of these patients. Because of the complexity of the problem, the necessity of a careful differential diagnosis has become imperative. In addition to the problem of differential diagnosis, the internist has the responsibility of directing these patients to the proper specialist, and he also has the responsibility of carrying out prophylactic measures. He is more likely to see these patients with their early manifestations, and he may have the final word as to whether conservative or radical measures are to be used in the treatment.

In the limited time for this paper, only a fragmentary discussion of a few of the phases of backache can be undertaken. It is not our purpose in this paper to go into the detailed classification or into a discussion of all of the phases of backache. Roughly, it is our purpose to call your attention to the certain phases of backache as the internist sees them and to discuss some of the problems of differential diagnosis. We wish also to emphasize the conservative management.

There are many classifications of backache. Some of them are based on the etiology, some on pathology, and some on the symptomatology. For our purpose in this paper we will use a modification of Ghormley's[13] classification as follows:

1. Those of traumatic origin including traumatic spondylitis, spondylolisthesis, fractures, perivertebral traumatic changes, traumatic myositis, intervertebral disk injuries, and traumatic injuries with superimposed inflammation.
2. Those probably of infectious origins including myositis, spondylitis, fibrositis, and those associated with acute infections such as osteomyelitis, tuberculosis, and syphilitic bone changes.
3. Those associated with degenerative changes such as spinal cord lesions, neurological conditions, tumors, primary or secondary malignancies, and obscure types in which no demonstrable lesion is found.

As we have mentioned in the introduction, it is the problem of the internist to make an accurate diagnosis, which implies that he be well acquainted with all of the causes of backache, both functional and organic. We must be able to evaluate the associated symptoms in their relationship to therapy.

In the lower part of the back there are many joints. There are periosteal coverings, synovial membranes, ligaments, fascias, and muscles. All of these structures may be the seat of infectious processes, degenerative changes, or of traumatic injuries. It is quite easy for us to understand the production of back pain when there is primary injury to these structures. Fracture of the vertebra, injury to spinous processes, ligamentous tears, or muscle injury can be readily appreciated in terms of symptoms. Likewise, we can appreciate and understand backache resulting from acute or subacute inflammation in which these structures are involved. These are the primary causes of backache, and this evidence of disease is accessible to even the most casual examiner. The secondary factors are more difficult to visualize and more frequently overlooked. In these cases the cause may be an old injury with resulting fibrositis, a muscle or ligamentous tear with hemorrhage and scar formation, or there may have been pre-existing disease in remote parts of the body which have caused spasm, contraction, or overextension of muscles. Pregnancy, obesity, malnutrition, or postural defects from many causes may have resulted in changes in the muscles and ligaments. Some of these factors may have produced lasting defects. Knowing this, we can then understand that these etiological factors may have become pathological factors in the production of backache. It is the prevention of this chain of circumstances in which the internist should be primarily interested. The function of the back is so dependent on the coordination of all of the skeletal structures that prolonged disturbance of muscle balance from any of the many causes may result in pathological states, which, in turn, produce the symptom, backaches.

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The internist seeing a patient who complains of backache, either with or without sciatic pain, should take a careful and detailed history. Not only should he inquire about the local symptoms, the history of recent or remote injury, the distribution of pain, and the limitations of activity, but he should also interrogate the patient in hope of finding signs or symptoms of other diseases. A previous history of infection, either local or systemic, such as psoas abscess, tuberculosis of the spine, osteomyelitis, rheumatic fever, recurrent tonsilitis, sinus disease, cardiovascular or gastrointestinal disease, urological or gynecological troubles, may be important.

Postural defects are responsible for many of the causes of low-back pain that the internist sees. The case history and physical examination are most revealing, but must be carefully done. We learn that the patient's backache began soon after pregnancy or we find that the patient's backache began after some relatively minor injury to a foot, a knee, or some other weight-bearing joint. It may have followed an acute infection with a lengthy period in bed, or some change in occupation. Postural backache occurs in malnutrition cases, in persons who are exceedingly obese, in those who have changed the type of shoe that they were wearing, or from many other seemingly trivial incidents. The mechanism by which backache is produced in these cases seems to be primarily one of muscle fatigue, strain, and imbalance. As we mentioned earlier in the paper, posture and muscle balance are dependent upon the coordination of all of the skeletal structures of the back. If then we have a change in this balance due either to injury with its accompanying spasm of the muscles or to relaxation of groups of muscles, as might be the case in malnourished individuals, backache ensues. This causes stretching of some of the muscles, fatigue of others, and necessitates the weight being shifted to points in the bony structures which are not designed to carry that load. In the course of time we may have contracture or atrophy of muscles and traumatic or degenerative changes in the bones and joints. These are points which should be elicited in the history. They may mean a great deal more in the eventual relief of the patient than a search for an infected tooth or some obscure foci of infection.

This brings us to the discussion of foci of infection in the production of low-back pain. This discussion will be exceedingly limited since the importance of foci of infection has not been emphasized as greatly in the past few years as previously. There is much evidence to prove that infection of various organisms may cause inflammatory conditions in the skeletal structures, and yet the poor results so frequently attained from the removal of these infected sources leave us somewhat skeptical. Suffice it to say that a person suffering from backache of any duration must have the benefit of every possible corrective measure, provided that these measures are in keeping with the seriousness of his disease. In other words, we do not believe in removing the tonsils of an elderly obese woman with a hypertrophic form of arthritis because she had a backache. Likewise, we do not believe in the radical extraction of teeth or other extreme measures in persons who have not been given the benefit of a careful examination and some conservative therapeutic measures. The physician treating backache should, by history, physical and laboratory examination, and by X-ray examination, determine whether he is dealing with atrophic or hypertrophic arthritis, or one of the many other diseases causing backache. He may determine from the history whether he is dealing with a traumatic type of rheumatism due to occupation, obesity, postural defects, or some other disease of long standing. It is not enough to say that a person's backache is of rheumatic origin simply because spurs are found on the bone or that there is evidence of old inflammatory or degenerative changes and an infected tooth or tonsils is carried by the victim. We should have some indication that the diseased process is active, and we should eliminate other coexisting causes.

Chronic cholecystitis, irritable colons, endocervicitis, prostatitis, chronic sinus infections, and inflammation in other organs have been suggested as foci of infections in backache, or muscular or arthritic origin. While this may well be, and we are not prepared to debate the issue here, there is much argument for and against the theory.

Urological disturbances are less likely to produce symptoms than have generally been thought. While kidney stones, obstructed ureters, or processes which may cause dilation of the renal capsule or pelvis may cause localized pain, low-back pain is probably due to muscle spasm and fatigue rather than to the direct influence of infection.

There is much discussion among the writers as to whether prostatitis or cystitis produces low-back pain, and it is very questionable if these are etiological factors. If there is considerable local congestion and swelling, it may possibly do so, but in the chronic stages it is doubtful. Likewise, there is indefinite evidence to prove that diseases of these organs serve as foci of infection in the production of myositis or rheumatic changes associated with backache. Also there is insufficient evidence to prove that disease of the pelvic organs produces backache, unless there is pelvic congestion and associated inflammation. In this case the cause is reflex-muscle spasm with postural defects and associated muscle fatigue. The presence of a cystocele, a rectocele, a malposition of the uterus, or prolapse of these organs does not imply that this is the cause of the patient's backache.

The functional causes of backache are the more easily overlooked, and these patients are most frequently abused. Let us relate a hypothetical case. A woman thirty years of age who has just come through her second pregnancy has backache. She has had the care of her first child during the pregnancy and the immediate care of the second child promptly after the delivery. She is nervous from overwork, loss of sleep, and there is social or environmental conflict which has produced nervousness and fatigue. As the months pass, the fatigue becomes greater, her nervousness increased, and her backache more severe. Examination of this patient may reveal an impacted wisdom tooth, suspicious or chronically-infected tonsils, chronic malnutrition, displacement and some relaxation of the pelvic tissues, and protruding hemorrhoids. We can see how easily this patient might be abused by a physician who is not too careful or conservative in his methods or by a shortsighted examiner who is thinking only in terms of his specialty. We know that functional disorders will produce real symptoms. Headache, palpitation of the heart, indigestion, frequency of urination, and many other symptoms which are entirely real to the patient may be of inorganic origin. I do not believe that it is necessary to go into a detailed discussion of the production of symptoms from functional diseases. We know that all of these patients suffer from excessive muscle fatigue because of a hypertonicity of the muscles and inability to obtain rest and relaxation. The back muscles are particularly susceptible to this fatigue. If there is associated organic disease, particularly loss of weight or impaired muscle tone with postural defects, we can readily understand the production of low-back pain. The clue in functional disease is the complete history. These patients will always inform us that they not only have backache, but many other symptoms, including aching in the legs, excessive fatigue, insomnia, etc.

In any case in which the physical and laboratory findings do not fit the clinical picture, we should give careful consideration to backache of functional origin. Rarely will a patient voluntarily give information of social or environmental conflicts or frustrations from any cause. It is with the greatest of difficulty that patients can understand the production of aches and pains from their nervous troubles. They seek every possible organic solution for their problem and attempt to minimize the nervous causes. Backaches of functional origin quite commonly may result from sexual or marital difficulties with localization of their symptoms nearest the site of their troubles.

We could give many other illustrations of functional backaches. If we are to be practitioners rather than tradesmen, we would urge the most thorough examination of these patients. Anything less will put us on the level of the chiropractor, and indeed it is better that the chiropractor treat these patients than to have them treated by a physician who thinks only in the terms of surgery.

Finally, we come to the traumatic types of backache in which we are interested not only from a differential standpoint, but from the standpoint of conservative management. Traumatic backaches may be from postural changes, from occupation, from excessive weight, from pregnancy, or they may have followed minor or major accidents. We have seen patients with fractured spinous processes from apparently slight physical effort and, of course, more severe efforts may produce greater structural damage. We mentioned at the onset that structural damage may be due to injury to the bone, periosteum, joints, ligaments, or muscles, and that injuries are usually accompanied by bleeding and swelling in and around these damaged tissues. There is also associated muscle spasm and a shift in the direction of the weight carriage. Examination in these cases is frequently quite unsatisfactory. We may find limitation of motion, evidence of muscle spasm, tenderness on pressure, localized areas of tenderness, sometimes great, often small. The pain which these patients complain of may be out of all proportion to the severity of the injury, and, in other cases, the pain may be slight. The pain is oftentimes referred, more particularly down the back of the leg. The patient's ability to stand pain enters into the picture, and the psychological effect of these injuries on patients, particularly in industrial cases, must be taken into account. The power of suggestion which relieves the patient's anxiety may also be equally as effective in keeping patients ill. We must not fall into error of discounting the symptoms of all patients who might receive compensation for injuries.

The internist is likely to see patients with less severe injuries, muscle strains, tears, or the so-called sacroiliac strains. We see many cases of traumatic myositis from postural, occupational, or direct injury. A patient may reach over to put on his shoe and get a "catch" in his back, from which he is disabled several days or several weeks. Because the X-ray examination does not show damage does not mean that a severe injury has not occurred.

The most common traumatic injury that the internist sees is that of myositis resulting from excessive muscle fatigue with some spasm because of damage to the underlying structures or because of postural changes. This causes overstretching of certain groups of muscles with overcontraction of others, and this finally ends in fibrous tissue bands, fibromyositis, and atrophy. Orthopedic surgeons have devised a means of diagnosing this atrophy, contraction, and other muscle changes. There are operations devised to correct these deformities, all of which we are not concerned with here.

The more dramatic traumatic injuries are those with associated rupture of the intervertebral disk. This condition was called to our attention a few years ago, and there have been many cases of dramatic relief by operative treatment. We are indebted to the neurosurgeon for this interest in these cases, but we would urge a word of caution in too frequent diagnosis of this malady. Because of the history of an injury with referred sciatic pain, it is easy to make an erroneous diagnosis of injury to intervertebral disks. Some neurosurgeons believe that they need only a history of backache with referred pain and an accentuation of pain on straight-leg raising to make this diagnosis. Others require only, in addition to these signs and symptoms, that a patient have pain on coughing or sneezing. Hasty conclusions in these cases will result in poor results, unnecessary operative procedures on the patient, and impaired confidence. Let us remember that in the cases of traumatic injury there are swelling, extravasation of blood, and muscle spasm in the involved areas. We may have scar tissue with contraction which can impinge on all of the soft structures. We may have had muscle spasm over a long period of time; we may have had atrophy or contractions. These changes may cause sciatic pain, and this sciatic pain may be accentuated on a straight-leg test, coughing, or sneezing. Coughing and sneezing cause violent contractions of all of the muscles of the trunk and would not in themselves be a final diagnostic point. We may have spinal cord tumors, tumors of the cauda equina, periosteal defects, and other pathological changes which may cause sciatic radiation. Before any operative procedure, carrying with it the responsibility that laminectomy does, the patient should have the benefit of every conservative means of diagnosis. Here, as in other forms of backache, the therapeutic test may be our best means of diagnosis. We have seen a number of patients with backache and sciatic pain who have been entirely relieved either with or without extension by two to three weeks of rest on a rigid bed. We have seen other patients who have had intervertebral disk operations who have not had the expected relief from their symptoms. By this we do not mean to imply that dramatic relief is not often obtained, but we do believe that these are formidable operations accompanied by surgical risk, and they should not be undertaken except after careful examination and a reasonably certain diagnosis. We do not believe that we are justified in operating on any of these patients until a therapeutic test has been tried.

The final diagnosis of the cause of backache rests not only on the study of the case history and etiological factors, considering all of those discussed above and many others not mentioned, but rests on the careful examination of the patient. Our examinations should include not only the structures of the back, but the entire body. It should include a certain amount of laboratory and X-ray work. Certainly we should determine if a person is anemic, and we should determine whether he has any acute, subacute, or chronic infection. We should make a Wassermann or Kahn test, which might reveal syphilitic, bone, peritoneal, or joint disease, and we should examine the urine for pathologic sediment. X-ray examination should be done by a trained roentgenologist who can tell us whether these changes which have occurred are inflammatory or degenerative, whether there is osteomyelitis, destruction of bone, or if there are other structural defects which might be causing the symptoms. We should learn to evaluate the importance of anomalies or old structural changes in view of the present complaints. A sedimentation rate is oftentimes of help to us in determining whether we might be dealing with some underlying infectious process which is causing the symptom. We would emphasize that no single test, no localized examination or a limited history is sufficient in making a final diagnosis on persons with backache. Finally, we may have to rely entirely on therapeutic trial tests. This would mean rest in bed with proper correction of postural defects, overcoming of muscle spasm, improving nutrition, reducing weight, or changing of occupation. Local or systemic treatment is indicated for associated disease. Correction of constipation, the use of pessaries, changes in habits, all may give us diagnostic information and aid in our therapeutic diagnosis. Then, and only then, do we believe that we are capable of making a diagnosis which indicates the necessity for radical procedures. With the braces and casts of the orthopedist or the scalpel of the otolaryngologist, the urologist, the gynecologist, proctologist, and neurosurgeon hanging threateningly over the patient, it is the general practitioner or internist who should have the final say as to who is to do the bloodletting.

In conclusion, we apologize for the very light consideration of many phases of backache and for the limited discussion of the more refined methods of diagnosis as used by the orthopedic surgeon. The subject is entirely too great for us to do more than emphasize those phases of backache which attract our attention and to urge careful examination and conservative treatment on these patients.

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DISCUSSION

DR. W. C. CHANEY (Memphis): Certainly no one can claim to be an expert in the treatment of this trouble. It is a malady that may be a complication in almost every specialty. Any one of us can recall many cases which have been relieved after the other fellow has made a total failure. Every one of us, too, has seen cases that have been relieved by some very simple procedure after all highly scientific methods have failed. Some cases are relieved after they have been assured that they do not have "kidney trouble." A few others, which have medico-legal aspects, are cured by the so-called "greenback poultice." Then there are other cases of backache, that, after all methods of examination are made, must still be classified as just "backache."

Knowledge of lesions of the intervertebral disks as a cause of backache, and also of pains that radiate along the line of well-known nerve trunks, is a real epoch-making step forward in the diagnosis and treatment of these conditions. Just what these abnormalities of the disks can do is being better understood daily. I do believe, however, at the present the pendulum has swung a little too far in diagnosing many backaches as being caused by intervertebral disks. In my opinion, abnormalities of the disks make up a rather small per cent of the causes of backache.

Temporary relief is important, but after that the real truth as to the cause of the pain must be sought through *time* (weeks to months), *frequent observations* of the patient *both before and after rest*, a clear history as to the type of pain and its radiation, a physical examination noting muscle spasm, tenderness, deformities, evidence of muscle wasting, and sensory changes and finally *interpretation of X-ray films* by an expert roentgenologist.

There are a few quite fundamental facts about the pain that give us a lot of help in diagnosis. (1) Pain due to traumatic lesions of the bones of the back is relieved by rest; (2) muscle pains often wake the patient up in the morning and improve with slight exercise; (3) patients with cord tumors or diseased disks walk the floor at night and often try to sleep with the feet on the floor and the body across the bed; (4) constant pains are often caused by malignancies and acute infections in or about the bones.

My professor of surgery used to say that the two cherubs in Raphael's Sistine Madonna, who, you will recall, have their heads resting in their hands, were really suffering from tuberculosis of the spine. Pulling upward on the head and neck gives relief from pain in inflammatory conditions of the spine.

I have learned a lot about backache from Doctor Gotten's paper.

DR. R. W. BILLINGTON (Nashville): Gentlemen, I wish to commend Doctor Gotten for this very sensible, thorough, well-balanced paper. I think it is one of the best papers on backache I have ever listened to, and I have written several myself.

We hear too much about sacroiliac strain, we hear too much about ruptured disks. It has been my belief for a long time that sacroiliac strain is largely a myth. It was offered as a diagnosis and explanation for back pain about 1910 or 1911 by the Boston school, particularly Doctor Goldthwaite and his coworkers, but in those days we had very imperfect means of studying the conditions; X-rays were very unsatisfactory so far as this region is concerned; we did not have the Bucky diaphragm in those days to give us clear pictures. We have learned a lot in many other ways about this region of the body and the causes of pain in the lower back.

I think Doctor Gotten's remarks with regard to the now popular diagnosis of ruptured disk, so-called ruptured nucleus pulposus (it is the disk that ruptures), are timely. This condition is an entity that exists, but I think the diagnosis is being overworked very decidedly.

We see a good many of these cases that have had operations that have not relieved them. We have had backache always, even though we may not have learned to make a diagnosis of a ruptured disk, and these cases have usually gotten well providing they were not due to malignant disease or to disease like tuberculosis or tumors into the cauda equina. They have gotten well by conservative methods, using the principle of rest, whether it is rest in bed, rest in certain positions, rest by means of plaster casts, rest by means of traction on the legs and on the head, by special corsets and other types of appliances. Most of them do get well and get over the attack by conservative treatment.

I think we need a note of warning now, as Doctor Gotten has very properly said, with regard to the quick diagnosis of injuries to the disk. The use of injections of lipiodol, I think, is certainly risky.

Some twenty years ago I read a paper on this subject before the Southern Medical Association. At that time I had pretty well lost faith in sacroiliac strain as a rational diagnosis, and at that time I made a classification of the causes of backache, which was very similar to the one that Doctor Gotten has presented here.

I just want to say to him that I think his paper would be a very good one to read at some of our orthopedic conventions.

DR. LUCIUS E. BURCH (Nashville): I want to congratulate Doctor Gotten on being conservative, and I heartily agree with what Doctor Billington has said. I trust that Doctor Billington will present a paper on this subject before a meeting of gynecologists.

I speak only from the viewpoint of the gynecologist. Backache that is due to pelvic pathology is found in the lower lumbar and sacral region, and even when present in these localities, orthopedic conditions are more common as the etiological factor than gynecological. It is very easy to determine if a retrodisplacement is the cause of backache by reducing the displacement and introducing a pessary to hold the uterus in place. At the end of a week or ten days if the backache has disappeared, it proves that the displaced uterus is the only cause of the symptoms. This same test is applicable to cases of prolapse. A careful analysis of each case is essential. In conclusion, I want to emphasize that gynecological operations should not be carried out where the only complaint is backache until all other etiological factors are eliminated.

TENNESSEE DOCTORS AND THE MILITARY SERVICE

The following is a list of Tennessee doctors who have applied for a commission in the Army or Navy. They are arranged in four categories as follows: first, those who have been commissioned and are on duty; second, those who have been commissioned and are awaiting orders; third, those who have applied for a commission and are awaiting action by the proper authorities; fourth, those who have applied for a commission and been rejected on physical grounds. The list under each category is arranged according to counties.

The list is not complete according to the date of publication. It is accurate in so far as our information goes as of the date the JOURNAL goes to press.

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Blount	Joseph T. Marshall	Chattanooga
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Davidson—Maurice Seligman	Nashville
Davidson—Henry Carroll Smith	Nashville
Davidson—Joe M. Strayhorn	Nashville
Davidson—Thos. B. Stone	Nashville
Davidson—Wm. A. Sullivan	Nashville
Davidson—A. J. Sutherland, Jr.	Nashville
Davidson—Chas. C. Trabue	Nashville
Davidson—W. A. Van Nortwick	Nashville
Davidson—Paul L. Warner	Nashville
Davidson—Thos. S. Weaver	Nashville
Davidson—B. M. Weinstein	Nashville
Davidson—Arthur L. White	Nashville
Davidson—Claiborne Williams	Nashville
Davidson—Herbert Wilson, Jr.	Nashville
Davidson—W. C. Winton	Nashville
Davidson—Jos. C. Wood	Nashville
Davidson—Thos. E. Wyatt	Nashville
Davidson—Chas. R. Yancey	Nashville
Davidson—Alvin Hawkins	Old Hickory
Davidson—A. S. Koenig	Old Hickory
Dickson—W. M. Jackson	Dickson
Dyer—C. L. Denton	Dyersburg
Franklin—Geo. L. Smith	Decherd
Gibson—Basil T. Bennett, Jr.	Trenton
Gibson—Roscoe Faulkner	Trenton
Greene—C. H. Henard	Mosheim
Hamblen—Robert A. Purvis	Morristown
Hamblen—D. R. Roach	Morristown
Hamblen—D. Z. Zimmermann	Morristown
Hamilton—C. H. Barnwell	Chattanooga
Hamilton—Alvin H. Benz	Chattanooga
Hamilton—Franklin B. Bogart	Chattanooga
Hamilton—Julian C. Brooks, Jr.	Chattanooga
Hamilton—S. W. Brown	Chattanooga
Hamilton—E. F. Buchner	Chattanooga
Hamilton—Douglas Chamberlain	Chattanooga
Hamilton—John W. Claiborne, Jr.	Chattanooga
Hamilton—J. R. Fancher	Chattanooga
Hamilton—J. L. Hamilton	Chattanooga
Hamilton—F. F. Harris	Chattanooga
Hamilton—H. D. Hickey	Chattanooga
Hamilton—H. P. Hewitt	Chattanooga
Hamilton—J. M. Higginbotham	Chattanooga
Hamilton—H. T. Holden	Chattanooga
Hamilton—Howard H. Karr	Chattanooga
Hamilton—J. J. Killeffer	Chattanooga
Hamilton—P. H. Livingston	Chattanooga
Hamilton—T. A. Lowery	Chattanooga
Hamilton—Augustus McCravey	Chattanooga
Hamilton—Richard H. Mellen	Chattanooga
Hamilton—Paul H. Milton	Chattanooga
Hamilton—Fay B. Murphey	Chattanooga
Hamilton—E. T. Newell, Jr.	Chattanooga
Hamilton—Wm. E. North	Chattanooga
Hamilton—Robt. C. Robertson	Chattanooga
Hamilton—T. G. Ross	Chattanooga
Hamilton—Milton C. Semoff	Chattanooga
Hamilton—Wm. J. Sheridan	Chattanooga
Hamilton—M. J. Smith, Jr.	Chattanooga
Hamilton—Wm. A. Stem	Chattanooga
Hamilton—W. Dean Steward	Chattanooga
Hamilton—Paul R. Swanson	Chattanooga
Hamilton—Oliver L. Von Canon	Chattanooga
Hamilton—J. W. Wilson, Jr.	Chattanooga
Hamilton—Robert A. Wise	Chattanooga
Hamilton—J. C. Wright	Chattanooga
Hardeman—D. L. Brint	Bolivar
Hardin—C. Whitman Borg	Savannah
Hardin—S. L. Stephenson, Jr.	Savannah
Hawkins—Landrum Tucker	Rogersville
Hawkins—A. S. Yates	Rogersville
Haywood—Robert C. Berson	Brownsville
Henry—J. W. Didcoct	Paris
Henry—J. C. McKissick	Paris
Henry—Geo. H. McSwain	Paris
Knox—R. G. Brashear	Knoxville
Knox—E. E. Carrier	Knoxville
Knox—L. W. Chesney	Knoxville
Knox—H. S. Christian	Knoxville
Knox—Sam M. Cooper	Knoxville
Knox—W. A. DeSautelle	Knoxville
Knox—T. B. Drinnen	Knoxville
Knox—J. H. Duggins	Knoxville
Knox—Geo. G. Henson	Knoxville
Knox—C. R. Huffman	Knoxville
Knox—C. E. Irwin	Knoxville
Knox—Willard J. Irwin	Knoxville
Knox—H. H. Jenkins	Knoxville
Knox—J. O. Kennedy	Knoxville
Knox—A. H. Lancaster	Knoxville
Knox—J. H. Lesher	Knoxville
Knox—J. D. McCullough	Knoxville
Knox—Wm. T. McPeake	Knoxville
Knox—J. L. Montgomery	Knoxville
Knox—Ralph Nichols	Knoxville
Knox—B. M. Overholt	Knoxville
Knox—Jos. B. Parker, Jr.	Knoxville (Inskip)
Knox—Herschel Penn	Knoxville
Knox—Jos. L. Raulston, Jr.	Knoxville
Knox—J. S. Ruffin, Jr.	Knoxville
Knox—P. D. Smith	Knoxville
Knox—J. M. Stockman	Knoxville
Knox—Geo. W. Tharp	Knoxville
Knox—Leon J. Willien	Knoxville
Knox—A. J. Weber	Bearden
Knox—Malcolm F. Cobb	Concord
Lake—W. T. Rainey	Tiptonville
Lauderdale—J. H. Nunn	Ripley
Lawrence—L. C. Harris, Jr.	Lawrenceburg
Lincoln—Ben H. Marshall	Fayetteville
Lincoln—M. C. Woodfin	Fayetteville
Loudon—F. E. Hufstedler	Lenoir City
Loudon—Avery Leeper	Lenoir City
McMinn—S. B. McClary, Jr.	Etowah
McNairy—H. O. Mason	Adamsville
Madison—L. D. Farragut	Bemis
Madison—H. H. Herron	Bemis
Madison—C. H. Brown	Jackson
Madison—R. S. Hellmann	Jackson
Madison—Carl Rogers	Jackson
Madison—A. R. Taylor	Jackson

Madison—J. R. Thompson, Jr.	Jackson
Madison—P. E. Wylie	Jackson
Madison—Stevens Byars	Mercer
Marshall—A. L. Cooper	Chapel Hill
Marshall—H. B. Disharoon	Lewisburg
Maury—W. N. Cook	Columbia
Maury—Robin Lyles	Columbia
Maury—J. B. Miller	Columbia
Monroe—D. F. Heuer, Jr.	Sweetwater
Monroe—R. M. Price	Sweetwater
Montgomery—J. A. Culbertson	Clarksville
Montgomery—John H. Ledbetter, Jr.	Clarksville
Obion—Hal E. Bennett	Troy
Obion—Edward W. Barksdull	Union City
Obion—R. M. Darnall	Union City
Pickett—Floyd B. Hay	Byrdstown
Polk—J. H. Lillard	Benton
Putnam—H. H. Taylor	Cookeville
Putnam—R. L. Akin	Monterey
Roane—G. D. Schuessler	Oliver Springs
Roane—F. Davis Owings	Rockwood
Rutherford—Harvey W. Carter	Murfreesboro
Sevier—Charles E. Pack, Jr.	Sevierville
Sevier—R. M. Perry	Sevierville
Shelby—R. Roger Anderson	Memphis
Shelby—Edward R. Atkinson	Memphis
Shelby—Chas H. Avent	Memphis
Shelby—Samuel Blackwell	Memphis
Shelby—W. B. Blaisdell, Jr.	Memphis
Shelby—James M. Bethea	Memphis
Shelby—Philip B. Bleecker	Memphis
Shelby—R. E. Bland (Col.)	Memphis
Shelby—H. O. Bourkard	Memphis
Shelby—James M. Brockman	Memphis
Shelby—W. T. Braun	Memphis
Shelby—W. T. Black, Jr.	Memphis
Shelby—J. G. Burd	Memphis
Shelby—J. Hughes Chandler	Memphis
Shelby—J. M. Chandler	Memphis
Shelby—J. M. Chambers, Jr.	Memphis
Shelby—R. B. Chrisman, Jr.	Memphis
Shelby—Phillip T. Crawford	Memphis
Shelby—J. A. Danciger	Memphis
Shelby—Chas. J. Deere	Memphis
Shelby—John MacDougall	Memphis
Shelby—J. D. Evans	Memphis
Shelby—M. L. Evans	Memphis
Shelby—Taylor Farrar	Memphis
Shelby—Harold Feinstein	Memphis
Shelby—Benj. Fendler	Memphis
Shelby—L. F. Ferrell	Memphis
Shelby—Dale E. Fox	Memphis
Shelby—Jos. A. Gardner, Jr.	Memphis
Shelby—Geo. E. Gish	Memphis
Shelby—V. A. Hall	Memphis
Shelby—J. A. Hanna	Memphis
Shelby—Carl M. Harwell, Jr.	Memphis
Shelby—R. D. Henderson	Memphis
Shelby—R. A. Hennessey	Memphis
Shelby—B. S. Henry	Memphis
Shelby—A. L. Herring	Memphis
Shelby—C. H. Householder	Memphis
Shelby—John L. Houston	Memphis
Shelby—James G. Hughes	Memphis
Shelby—John D. Hughes	Memphis
Shelby—Chas. W. Ingle	Memphis
Shelby—Alvin Ingraham	Memphis
Shelby—Harry Johnson	Memphis
Shelby—Albert M. Jones	Memphis
Shelby—W. B. Key	Memphis
Shelby—John C. King	Memphis
Shelby—Richard King	Memphis
Shelby—Nathanial W. Kuykendall, Jr.	Memphis
Shelby—Chas. M. Lobrano	Memphis
Shelby—D. G. Lockwood	Memphis
Shelby—J. P. Long, Jr.	Memphis
Shelby—Donald A. McCannel	Memphis
Shelby—O. S. McCown, Jr.	Memphis
Shelby—Eugene E. McKenzie	Memphis
Shelby—Wm. Battle Malone, II	Memphis
Shelby—Thomas P. Manigan	Memphis
Shelby—P. M. Markle	Memphis
Shelby—Wm. P. Maury, Jr.	Memphis
Shelby—R. A. Miller	Memphis
Shelby—Thos. Lane Moore, Jr.	Memphis
Shelby—J. P. Moss	Memphis
Shelby—Francis Murphey	Memphis
Shelby—Bedford T. Otey	Memphis
Shelby—Alfred H. Page	Memphis
Shelby—Wm. H. Parker	Memphis
Shelby—Geo. E. Paullus, Jr.	Memphis
Shelby—Ben Pentecost	Memphis
Shelby—J. R. Pepin	Memphis
Shelby—V. D. Pettit	Memphis
Shelby—Hugh R. Raines	Memphis
Shelby—L. C. Ramsay	Memphis
Shelby—Chas. G. Robinson	Memphis
Shelby—P. B. Russell, Jr.	Memphis
Shelby—Wm. T. Satterfield	Memphis
Shelby—Schayel Scheinberg	Memphis
Shelby—E. C. Segerson	Memphis
Shelby—J. L. Shaw	Memphis
Shelby—S. D. Sullenberger	Chattanooga
Shelby—R. C. Taylor	Memphis
Shelby—M. J. Tendler	Memphis
Shelby—W. M. Tipton	Memphis
Shelby—A. B. Tripp	Memphis
Shelby—I. F. Tullis, Jr.	Memphis
Shelby—C. F. Varner	Memphis
Shelby—R. A. Wallace	Memphis
Shelby—T. L. Waring	Memphis
Shelby—O. S. Warr, Jr.	Memphis
Shelby—W. W. Watkins	Memphis
Shelby—J. E. Watson, Jr.	Memphis
Shelby—Julian K. Welch, Jr.	Memphis
Shelby—Horace G. Williams	Memphis
Shelby—Harwell Wilson	Memphis
Shelby—J. E. Wilson	Memphis
Sullivan—J. W. Erwin	Blountville
Sullivan—G. W. McCall	Bristol
Sullivan—B. W. Mongle	Bristol
Sullivan—R. W. Asthalter	Kingsport
Sullivan—H. O. Bolling	Kingsport
Sullivan—R. H. Brown	Kingsport
Sullivan—H. S. Burem	Kingsport
Sullivan—John B. Hamilton	Kingsport
Sullivan—R. B. Howard	Kingsport
Sullivan—K. R. Kiesau	Kingsport

Sullivan—M. D. Massengill, Jr.________Kingsport
Sullivan—J. F. Morton________Kingsport
Sullivan—R. G. Nichols________Kingsport
Sullivan—Raymond A. Steadman________Kingsport
Sumner—P. M. Huggins________Gallatin
Tipton—O. J. Swisher________Covington
Unicoi—R. H. Harvey________Erwin
Unicoi—W. C. Humbert________Erwin
Unicoi—H. L. Monroe________Erwin
Union—Norman H. Rucker________Luttrell
Washington—C. S. Gresham________Johnson City
Washington—W. D. Hankins________Johnson City
Washington—Harry Myron, Jr.________Johnson City
Washington—W. L. Poole________Johnson City
Washington—W. G. Preas________Johnson City
Washington—Hugh F. Swingle________Johnson City
Washington—Charles P. Wofford________Johnson City
Washington—H. B. Cupp________Mountain Home
Washington—John Busey________Mountain Home
Washington—Ernest Marcus________Mountain Home
Wayne—Dexter L. Woods________Waynesboro
Weakley—Madison H. Buckley________Martin
Wilson—O. R. Hill________Lebanon
Wilson—James McFarland, Jr.________Lebanon
Wilson—W. K. Tilley________Lebanon

DOCTORS WHO HAVE RECEIVED COMMISSIONS AND AWAITING ORDERS TO ACTIVE DUTY

County *Name* *Address*

Davidson—Newton A. Cannon________Nashville
Davidson—C. M. Fishbach________Nashville
Davidson—Nathan P. Horner________Nashville
Davidson—Willard O. Tirrill, Jr.________Nashville
Gibson—James O. Barker________Trenton
Hamilton—Howard M. Ausherman________Chattanooga
Hamilton—Walter Buckner, II________Chattanooga
Hamilton—Harley C. Darnall________Chattanooga
Hamilton—Richard V. Fletcher________Chattanooga
Hamilton—Eugene F. McCall________Chattanooga
Jefferson—William B. Malcolm________Dandridge
Jefferson—Frank L. Miligan________Jefferson City
Knox—R. H. Butler________Knoxville
Knox—Sam P. Davidson________Knoxville
Knox—Richard N. Duffey________Knoxville
Knox—J. G. Eblen________Knoxville
Knox—James B. Ely________Knoxville
Knox—Peter J. Flippin________Knoxville
Knox—Glenn D. Grubb________Knoxville
Knox—Oliver W. Hill, Jr.________Knoxville
Knox—D. T. Hoey________Knoxville
Knox—R. E. Lawson________Knoxville
Knox—R. P. Layman________Knoxville
Knox—L. C. Ogle________Knoxville
Knox—John S. Powers, Jr.________Knoxville
Knox—J. W. Riggs________Knoxville
Knox—John A. Range________Knoxville
Knox—Jacob M. Williams________Knoxville
Madison—J. E. Douglass________Jackson
Polk—H. H. Hyatt________Ducktown
Shelby—George M. Bogardus________Memphis
Shelby—Joseph A. Buchignani________Memphis
Shelby—Floyd M. Davis________Memphis
Shelby—Fred A. Goldsberg________Memphis
Shelby—L. I. Goldsmith________Memphis
Shelby—Harry Z. Landis________Memphis
Shelby—Robert E. Lawson________Memphis
Shelby—Richard W. Miller________Memphis
Shelby—Ira F. Porter________Memphis
Shelby—Raymond W. Polk________Memphis
Shelby—P. A. Statile________Memphis
Shelby—Bryant S. Swindoll________Memphis
Sumner—Benjamin H. Warren________Gallatin

DOCTORS WHO HAVE APPLIED AND WHOSE COMMISSIONS ARE PENDING

Bradley—Wm. A. Garrott________Cleveland
Carter—W. W. Evans________Elizabethton
Davidson—L. R. Gayden________Nashville
Davidson—James T. Hayes________Nashville
Davidson—Travis H. Martin________Nashville
Davidson—Theodore Morford________Nashville
Davidson—Paul E. Purks________Nashville
Davidson—E. M. Robinson________Nashville
Hamblen—Chas. S. Crook________Morristown
Knox—B. B. Mitchell________Fountain City
Knox—E. M. Eddington________Knoxville
Knox—Owen D. Moore________Knoxville
Knox—E. P. Nicely________Knoxville
Knox—Frank O. Nichols________Knoxville
Knox—Jarrell Penn________Knoxville
Knox—Wiley R. Smith________Knoxville
Lincoln—James V. McRady________Fayetteville
Shelby—M. W. Adams________Memphis
Shelby—Justin H. Adler________Memphis
Shelby—C. G. Andrews________Memphis
Shelby—James D. Biles________Memphis
Shelby—R. F. Bonner________Memphis
Shelby—G. B. Bland________Memphis
Shelby—Carey Bringle________Memphis
Shelby—Richard E. Ching________Memphis
Shelby—E. S. Eddins________Memphis
Shelby—C. B. Etter________Memphis
Shelby—B. F. Floyd________Memphis
Shelby—Jack S. Goltman________Memphis
Shelby—H. B. Gotten________Memphis
Shelby—Nicholas Gotten________Memphis
Shelby—H. D. Gray________Memphis
Shelby—O. N. Jones________Memphis
Shelby—C. K. Lewis________Memphis
Shelby—J. H. Lotz________Memphis
Shelby—J. W. McElroy________Memphis
Shelby—J. W. McKinney________Memphis
Shelby—E. D. Mitchell, Jr.________Memphis
Shelby—J. C. Mobley________Memphis
Shelby—Henry Moskowitz________Memphis
Shelby—D. W. Oelker________Memphis
Shelby—C. B. Olim________Memphis
Shelby—Michael J. Roach, Jr.________Memphis
Shelby—Wm. A. Runkle________Memphis
Shelby—Hugh Smith________Memphis
Shelby—B. S. Talley________Memphis
Shelby—S. I. Wener________Memphis

DOCTORS WHO APPLIED FOR COMMISSIONS, BUT REJECTED ON PHYSICAL GROUNDS

Anderson—Trent O. Huff________Clinton
Cannon—Carl E. Adams________Woodbury

Carter—E. T. Pearson----Elizabethton
Davidson—E. E. Anderson----Donelson
Davidson—Joe E. Sutherland----Madison College
Davidson—J. J. Ashby----Nashville
Davidson—Lynch D. Bennett----Nashville
Davidson—David W. Hailey----Nashville
Davidson—Thos. M. Jordan----Nashville
Davidson—Carl Kirchmaier----Nashville
Davidson—N. B. Morris----Nashville
Davidson—James C. Overall----Nashville
Davidson—James N. Owens----Nashville
Davidson—Albert Weinstein----Nashville
Davidson—Eston D. White----Nashville
Davidson—V. J. Wong----Nashville
Davidson—J. H. Solomon----Old Hickory
Franklin—Jeff C. Moore----Winchester
Gibson—Henry N. Moore----Milan
Greene—Rae B. Gibson----Greeneville
Greene—Johnnie Kyte----Greeneville
Hamblen—Maxwell D. Raine----Morristown
Hamilton—Justin O. Adams----Chattanooga
Hamilton—William D. Anderson----Chattanooga
Hamilton—William Ross Buttram----Chattanooga
Hamilton—Orville C. Gass----Chattanooga
Hamilton—Foster Hampton, Jr.----Chattanooga
Hamilton—John W. Hocker----Chattanooga
Hamilton—D. Isbell----Chattanooga
Hamilton—D. B. Karr----Chattanooga
Hamilton—Geo. E. Lacy----Chattanooga
Hamilton—J. G. McMillan----Chattanooga
Hamilton—Tim J. Manson----Chattanooga
Hamilton—Fred E. Marsh----Chattanooga
Hamilton—J. R. Martin----Chattanooga
Hamilton—Chas. T. Read----Chattanooga
Hamilton—E. E. Reisman, Jr.----Chattanooga
Hamilton—Clarence Shaw----Chattanooga
Hamilton—H. J. Starr----Chattanooga
Hamilton—W. E. Van Order----Chattanooga
Hamilton—J. J. Word----Chattanooga
Hamilton—P. H. Dietrich----Ooltewah
Hawkins—John E. Kite, Jr.----Bulls Gap
Henry—Barton McSwain----Paris
Knox—Charles W. Black----Knoxville
Knox—Jack Chesney----Knoxville
Knox—William E. Clark----Knoxville
Knox—John R. Hill----Knoxville
Knox—Joel C. Morris----Knoxville
Knox—Bruce R. Powers----Knoxville
Knox—Philip C. Thomas----Knoxville
Knox—V. I. Smith----Knoxville
Knox—Richard G. Waterhouse----Knoxville
Knox—V. M. Williger----Knoxville
Lawrence—W. O. Crowder----Lawrenceburg
Loudon—J. P. Cullum----Lenoir City
Madison—Roderick C. Webb----Bemis
Madison—Glenn D. Batten----Jackson
Madison—Leland M. Johnston----Jackson
Madison—John C. Pearce----Jackson
Marshall—J. T. Gordan----Lewisburg
Morgan—Wm. E. Gallion----Oakdale
Shelby—J. C. Ayres, Jr.----Memphis
Shelby—William A. Barnes----Memphis
Shelby—Harold B. Boyd----Memphis
Shelby—John S. Buchignani----Memphis
Shelby—E. D. Connell----Memphis
Shelby—Jewell M. Dorris----Memphis
Shelby—George C. Furr----Memphis
Shelby—David W. Goltman----Memphis
Shelby—H. V. Greenburgh----Memphis
Shelby—A. J. Grobmyer, Jr.----Memphis
Shelby—Robert M. Gross----Memphis
Shelby—Chas. Wm. Harting----Memphis
Shelby—H. J. Jacobson----Memphis
Shelby—Lyman Kasselberg----Memphis
Shelby—Robert A. Knight----Memphis
Shelby—Phil M. Lewis----Memphis
Shelby—Frank O. McGehee----Memphis
Shelby—Leroy H. Mayfield----Memphis
Shelby—C. Wilson Moore----Memphis
Shelby—Swan B. Moss----Memphis
Shelby—Charles M. Oberschmidt----Memphis
Shelby—Chas. B. Olim----Memphis
Shelby—Jesse M. Roy----Memphis
Shelby—David E. Scheinberg----Memphis
Shelby—Phillip C. Schreier----Memphis
Shelby—Lawrence Sebulsky----Memphis
Shelby—Chas. C. Smeltzer----Memphis
Shelby—Edwin M. Stevenson----Memphis
Sullivan—M. J. Adams----Kingsport
Sullivan—Wm. H. Chappell----Kingsport
Sullivan—P. W. Cox----Kingsport
Sullivan—Austin W. Wiley----Kingsport
Washington—John F. Moore----Johnson City
Washington—J. R. Bowman----Johnson City
Washington—T. P. McKee----Johnson City

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H. H. SHOULDERS, M.D., Editor and Secretary

AUGUST, 1942

EDITORIAL

THE NATIONAL PHYSICIANS' COMMITTEE

This committee is performing a very important function which cannot be performed by the American Medical Association at this time.

The following is a statement of its purpose and its pledge:

"The National Physicians' Committee is a nonpolitical, nonprofit corporation devoted to (1) the task of securing the most widespread distribution of the most effective methods and equipment in medicine and surgery; (2) familiarizing the public with the facts in connection with the values, the methods, and the achievements of American medicine.

"*It is pledged* to maintain constantly 'The Alert' and continuously be active in necessary and important spheres in an unlimited effort to preserve for the medical profession the independence and freedoms essential to its continued progress and greatest effectiveness in public service.

"*It is* financed exclusively by voluntary contributions."

The list of men who compose its board of trustees is adequate testimony that these purposes will be carried out faithfully and this pledge will be kept.

The House of Delegates of the American Medical Association adopted two resolutions on this subject on June 9, 1942. *Resolution No. 1 reads:*

"*Be It Resolved*, That we register our approval of the activities of the National Physicians' Committee for the Extension of Medical Service, commend the Board of Trustees and the management of this institution for the efforts they have made to enlighten the general public in connection with American medicine's methods, progress, and achievements, and in pointing out that the public has a vital interest in the final result; and

"*Be It Further Resolved*, That it be declared the policy of this House of Delegates to encourage this effort and similar efforts with identical purposes."

Resolution No. 2 reads:

"*Be It Resolved*, That we, the House of Delegates of the American Medical Association, place ourselves officially on record as recognizing our responsibility for making the utmost effort to preserve the elements of independence and freedom of action that will make possible the easy reentry of physicians to civilian practice. To this end we recommend that a definite part of each program of every component member Medical Society be devoted to a reconsideration of the traditions, the standards, the freedoms, the effects of the absence of restraints and outside controls which have contributed so materially to American medicine's unequaled progress and vast achievements."

NURSES AND THE WAR SERVICE

Recently there has been created a National Nursing Council for War, with headquarters at 1790 Broadway, New York City, New York. The council has issued an urgent appeal for nurses to make themselves available to the armed services.

It is stated that the Army and Navy are now asking for three thousand nurses a month. In order to meet this demand there must be curtailment of nursing activities as they are carried on at the present time.

In a circular recently issued by the council the following statements are made to aid nurses in arriving at a decision as to their duty:

1. The armed forces must have adequate nursing care.
2. There are not enough additional nurses to allow "service as usual."
3. Voluntary adjustment of supply and distribution of nursing service is the national policy in the present state of the war.
4. "All-out" assignment of nurses eligible for military services may be made necessary by changing war conditions. If it does, revision of the classifications will result.

As a further aid in a decision the following statements are made:

YOU SHOULD SERVE

With the Armed Forces

If you are single, under forty, and are

1. Doing private duty;
2. On a hospital's general staff;
3. A head nurse not essential for teaching or supervision;
4. A public health nurse not essential for maintaining minimum civilian health service in any given community;
5. In a non-nursing position;
6. An office nurse.

At Home

If you have a position

1. In a hospital which has a school of nursing as:
   a. Administrator in a key position,
   b. Instructor,
   c. Supervisor,
   d. Head nurse in position related to teaching or supervision;
2. In a hospital without a school of nursing as:
   a. Administrator,
   b. Supervisor;
3. In a public health agency as:
   a. Administrator,
   b. Teacher and supervisor,
   c. Staff nurse essential for maintaining minimum civilian health services in any given community,
   d. Industrial nurse.

THE PLANNED PARENTHOOD FEDERATION OF AMERICA, INC.

Dr. J. H. J. Upham of Columbus, Ohio, has been made chairman of the Board of Directors of the Planned Parenthood Federation of America. His first statement of policy is as follows:

THE RIGHT TO KNOWLEDGE

"In the Fascist countries, women are ordered by the state to bear children as raw material for industrial and military machines, without regard for individual freedom of choice or the integrity of the family.

"Our country is at war against the armed forces of the Axis powers. But it is also at war against a way of life in which human freedom is consistently violated. In America we believe in the right of children to be well-born and in the right of parents to control their own lives. Freedom to make decisions is always, however, dependent upon knowledge.

"The Planned Parenthood Federation of America believes that the decision when to have a child is the clear right of every married couple. It demands that this right be insured by the provision of competent medical advice on the spacing of pregnancies whereby parents can plan their families so as to insure a maximum of health and well-being for themselves and their children.

PLANNED PARENTHOOD AND PUBLIC HEALTH

"The planning of pregnancies has a definite and positive contribution to make to the promotion of the public health. Only when such planning is included in our public health program can a maximum of physical and emotional well-being be attained.

"During the past five years there were 50,931 maternal deaths, 367,097 stillbirths, and 340,740 infants died within the first month of life—a total of 758,768 deaths from causes associated with pregnancy and childbirth. Each year abortions kill, make sterile, or otherwise permanently injure many thousands of married women. A large part of these deaths and injuries could be avoided by adequate birth control measures. Wives with tuberculosis, with diseases of the heart and kidneys, and with certain forms of neuroses and psychoses may be damaged for life by pregnancies that are hazardous and therefore undesirable both medically and socially.

"Planned parenthood is a vital and essential factor in the general health program of our nation. It has been recognized and approved by the American Medical Association and by many state and county medical societies. It forms an integral and important part of the official public health programs of Alabama, North Carolina, and South Carolina. Pregnancy-spacing services are, at present, available in more than 400 clinics supported by public funds.

PLANNED PARENTHOOD IN WARTIME

"The problems of planned parenthood have always been important. They are more important in the present crisis. Our young men are leaving their families to join the armed forces. Up to six million women will eventually take their places in war industries. Their country needs their service in maximum health.

"These women should have the right to conceive by choice rather than to bear unwanted children by chance. If wives obliged to support the families of soldiers, and wives living with their husbands in crowded war industry boom towns under conditions of inadequate housing, desire to postpone bringing an additional child into this troubled world, the decision should be theirs.

"These are the women whose children will live in the free world for which this war is being fought. They deserve the right to increase the number of those children at a time and under conditions which will provide children and mothers with abundant opportunity for a healthful family life.

"Pregnancy-spacing services for mothers enlisted in the great army of civilian defense—whether as workers or as homemakers—form an essential part of the war health program. Such services are supportive of all our efforts to afford increasingly effective health programs through the provision of essential public health services, nutrition, housing, and medical care.

"The postwar future of our country, and of the world, will be determined largely by the application of scientific knowledge to the protection of the health of mothers and children. Such knowledge is positive as well as negative. In the marriage counseling services which we encourage, the treatment of involuntary sterility is included. Mothers should be enabled to have children, and as many as they desire, as well as have advice as to the time and frequency of pregnancy in terms of individual and communal well-being. In building the world of the future we shall have place for all the children who can be well-born and well-reared.

"The Planned Parenthood Federation believes that its program constitutes a vital and essential step toward the winning of victory and toward the strengthening of family and community life in the days that are to come.

"J. H. J. UPHAM,
"Chairman of the Board of Directors."

This organization selected an excellent leader to head its program and his first statement seems to the editor to be quite sound.

THE BROAD-MINDEDNESS OF THE MEDICAL PROFESSION

Every now and then doctors are accused of being narrow-minded. This never was a valid accusation. Doctors demand that a new thing be proven before they place it in general use. This caution makes progress safe.

The extent to which the so-called Kenny Method of Treatment for Infantile Paralysis is being adopted by the medical profession is proof of the fact that doctors are not narrow-minded.

It is interesting to note that the National Foundation for Infantile Paralysis has just made a $300,000 grant to Johns Hopkins for the purpose of conducting a study of this treatment. In a notice with reference to the grant they have the following to say about Miss Kenny and the treatment:

"To understand how a nurse could present a form of treatment apparently superior to that long advocated by the medical profession calls for a word of explanation about that nurse.

"Miss Kenny years ago acquired a truly remarkable knowledge of anatomy and of muscle function. This came as the result of persistent study plus a real interest in things mechanical. Miss Kenny is one of those persons with real mechanical ability. Trained in a different direction, she might well have become a famous inventor. As it is, she has designed several items which are of great service.

CONFRONTED WITH EPIDEMIC

"Before the last war, while serving as a community nurse in the remote parts of Australia far removed from all medical help, Miss Kenny was faced with an epidemic of infantile paralysis. She asked for medical advice and assistance. She was told to go ahead on her own and do the best she could. This was a disease with which she was not familiar. She did not know just what to do. She had no definite directions to follow. She therefore examined her patients, looked at them with eyes and a mind trained as a nurse, but backed by that inherent mechanical ability. Looking at her patients she saw not only children suffering from pain in muscles, but she also saw a series of levers, pulleys, and a mechanical system. Something had gone wrong with the mechanism of motion of the human bodies of these people. Arms, legs, hands, and feet could not move.

APPLIED HER MECHANICAL TALENTS

"To Miss Kenny this was mechanical and so was not particularly mysterious, and because she was a born healer there was certainly nothing hopeless about the situation. She saw that muscles were painful and sore, that they were hard, contracted, and in spasm, pulling the opposite muscles out of shape so that they could no longer function. What did she do? She applied heat. She tore up old blankets, wrung them nearly dry out of very hot water. She repeated this hour after hour and it relieved the pain. The patients felt so much better when Sister Kenny applied her hot packs.

"Gradually the pain and spasm relaxed, but arms and legs, hands and feet could not move. Gently, very gently, Miss Kenny moved them for her patients, moved them so the patients would not forget how to do so by themselves. Persistently and with infinite patience she taught them motion. She was equally persistent in preventing muscles from trying to do that for which they were not intended. The paralyzed child in his tremendous effort to regain lost power would bring into play muscles that had no part in the picture, leaving the functionless muscles entirely out.

RE-EDUCATES MUSCLES

"We all know how this is done. Watch a man heave and tug, trying to lift a crate far too heavy for him. He will strain with all the muscles of his arms and legs, abdomen and back, and then will make the most horrible faces. Contracting the muscles of his face does not help lift the box. It is nothing more than a surcharge of energy spilling over and accomplishing nothing. So, too, by misdirected nervous impulses will the infantile paralysis patient contract muscles totally unrelated to those that should be moved or which he is attempting to move, but which have been knocked out by the disease. The man with his heavy crate will, after awhile, either succeed in moving it or will cease his efforts. The infantile paralysis patient, however, will keep on trying, but unless he is given proper guidance and help, all he will succeed in doing will be to move the wrong muscles. He will be exactly like a man trying to lift a heavy crate by facial contortions alone. A crippled child in this condition presented an abhorrent situation for Kenny the anatomist. It challenged Kenny the mechanical genius. And it certainly was intolerable to Kenny the nurse.

"This work of applying heat to relieve pain and the business of re-educating muscles after the pain and spasm had disappeared was not founded upon any knowledge of physiology or pathology of the disease. But it worked. Miss Kenny found that her patients recovered far better and to a greater extent than had those treated by notable surgeons and physicians of her country.

HER CLAIMS EXTENSIVELY TESTED

"In 1940 Miss Kenny came to the National Foundation for Infantile Paralysis, bearing letters of introduction from her premier in Queensland, Australia. She was established at the University of Minnesota, aided in her work by funds from the National Foundation. A program of study was set up. The purpose of this was to test the claims advanced by Miss Kenny to provide her with patients and to see if she could produce results that were better than had been previously achieved. Full cooperation was given by the University's Departments of Orthopedic Surgery and Physical Therapy.

"At the end of the year a special medical committee, appointed by President Basil O'Connor, made a study of these results. Their report was favorable and, in substance, said that Miss Kenny had been able to do better with her patients than anyone had heretofore done. More patients were made available to her and still further study was carried on at the Minneapolis General and the University of Minnesota Hospitals. At the Foundation's Annual Medical Meeting in December, 1941, her work was again reviewed by our medical advisory committees. We have carried out the specific recommendations which they made at that time. (cf. *News*, December, 1941.)

"All this was done on the evidence that patients appeared to be better after receiving her form of treatment. There was nothing really scientific about this. There was no definite proof. It was open to the contention that perhaps they might have recovered anyway. But with renewed energy research physicians took up the study of new phases of infantile paralysis.

"Physicians had been taught that infantile paralysis was really paralysis. Kenny claimed that infantile paralysis was rarely paralysis, but was really spasm of muscles. This was an exactly opposite concept. Physicians used a method of treatment which consisted of immobilization by casts or splints. Kenny claimed that these were all wrong, for they merely increased the spasm and led to contractures and permanent deformities. According to her, the thing to do was to apply heat to relax the spasm and then start very early passive and active motion of the involved muscles.

"Quickly with aid from the National Foundation men of science took this problem into their laboratories. Time has not permitted for evaluation of all points, but certain things have been brought out showing that Kenny's claims are on a sound foundation.

SPASM FOUND TO EXIST

"In one laboratory equipped with delicate electrical instruments the strength of nerve impulses was determined in both paralyzed muscles and those in spasm. As an impulse to produce motion travels down the course of a nerve to a muscle, minute electrical currents are generated. These can be picked up and magnified, as are the waves coming to a radio receiving set. They can be measured, recorded photographically, studied, and analyzed. It was found that muscles which were unable to move were not paralyzed in the sense that their nerves were destroyed, but were in spasm. Nerve impulses still were being sent to them, but these did not produce motion.

"In this same laboratory heat after the Kenny manner was applied to some of these muscles. They showed recovery of their ability to transmit nerve impulses in a normal way and to have these impulses translated into useful motion. Other muscles, with spasm, were not treated. After long weeks they still showed their spasm! Here was the first real proof that Miss Kenny was treating a condition which actually did exist!

"Let it not be misunderstood—there may be true paralysis. In some cases the disease is so severe and the destruction of nerve cells is so complete that there is true paralysis. Nerves are dead. They transmit no impulses to muscles. The Kenny method cannot restore life to nerves that are dead. Here the paralysis is permanent. Only surgery and mechanical bracing with steel and leather can provide support and strength to this form of crippling.

"REST" TREATMENT SLOWED RECOVERY

"Other laboratories carried on studies. In the experimental animal, nerves to muscles were crushed or cut. This is as close as the experimenter can come to producing symptoms like those of infantile paralysis. The muscles supplied by these nerves were paralyzed, but the laboratorian had not killed the nerve cells; he had only temporarily broken the pathway between nerve centers and muscles. Nature repaired this break; nerve fibers regenerated. Some of the experimental animals had their paralyzed legs placed in splints or plaster casts. Others were allowed to run free, moving about as best they could. The rate and degree of recovery of the two groups were compared. Those with the casts and splints, with complete "rest" of the paralyzed muscles, recovered more slowly and to a lesser degree than those that were not splinted.

"While these animals did not have infantile paralysis, and while they were not little children recovering from an acute illness, the two conditions were not too dissimilar. At least, it was shown that complete immobilization by mechanical means in such nerve injury cases caused damage. This apparently offered some justification for Miss Kenny's contention that splints and plaster casts should not be used in infantile paralysis.

HAS STIMULATED RESEARCH

"These are but the preliminary results of two types of studies. Others are being carried on in many places. In time, as new truths are learned, improvements in treatment may be expected. Armed with such facts physicians can separate the true from the false. They can improve, add to and modify the treatment until the best possible care will be made available.

"A great tribute must be paid to Miss Elizabeth Kenny of Australia, not only for her contribution of an improved method of treatment of poliomyelitis, but also for furnishing a stimulus for a new line of scientific endeavor and research—research that may go far in supplying information to fill in the many gaps in our knowledge of this disease."

NEWS FROM AND ABOUT TENNESSEE DOCTORS IN THE MILITARY SERVICE

The JOURNAL has always carried news items under the heading "News Notes and Comment." It is thought that a limited space might be devoted to news notes from and about members in the military service.

It is obvious that these notes must come largely from those who are in the service. It is obvious also that the communications must be brief.

Members who are in the service will be surprised at the number of inquiries received about them.

It is not possible for this office to keep in touch with all who are in the service. It must be understood that we have no source of information other than the men in service. If you will send us brief notes about yourselves and other men you know, this page can be made of great interest to both groups—the men in the service and the men at home. The following is an example:

W. K. Tilley, Lebanon, to 86th A. A. F. F. T. D., Jackson, Tennessee.

J. L. Hamilton, Chattanooga, to Fitzsimmons General Hospital, Denver, Colorado.

Roy B. Howard, Kingsport, to 453 Angelus Street, Memphis.

Harwell Wilson, Memphis, to 300th General Hospital, Camp Forrest, Tennessee.

George E. Paullus, Jr., Memphis, to 117 West Tenth Street, Hattiesburg, Mississippi.

James M. Brockman, Memphis, to Station Hospital, Foster Field, Victoria, Texas.

Garth Fort, Camp Chaffee, Arkansas, to Camp Forrest, Tennessee.

John Lillard, Benton, to 247 Jefferson Avenue, Metainie, Louisiana.

P. M. Dings, Briceville, to Camp Tyson, Paris, Tennessee.

Dexter L. Woods, Waynesboro, to 203d Field Artillery, Camp Shelby, Mississippi.

Joe L. Raulston, Knoxville, to William Beaumont Hospital, El Paso, Texas.

Edward A. McEver, Gadsden, Alabama, to 4461 Post Avenue, Miami Beach, Florida.

J. Avery Leeper, Lenoir City, to Station Hospital, Fort Jackson, South Carolina.

J. K. Welch, Jr., Memphis, to Company B, 28th Medical Training Battalion, Camp Grant, Illinois.

Herbert Wilson, Washington, D. C., to U. S. S. Swanson, care Postmaster, New York City.

James R. McMillan, Brooklyn, New York, to 0-403973, A. P. O. 930, Seventh Evacuation Hospital, care Postmaster, San Francisco.

Frank F. Ellis, Jr., Fort Bragg, North Carolina, to Station Hospital, Box 38, Fort Jackson, South Carolina.

E. E. Carrier, Fort Bragg, North Carolina, to Fort Sam Houston, Division of Surgeon's Office, Second Infantry Division.

Stevens Byars, Fort Benning, Georgia, to Medical Detachment, Eighth Infantry, Camp Gordon, Georgia.

William N. Cook, Post Hospital, Fort Jackson, South Carolina, to Composite Force, 8012, Camp Pendleton, Virginia.

Douglas Heuer, Jr., Camp Lee, Petersburg, Virginia, to Station Hospital No. 3, Fort Bragg, North Carolina.

P. B. Russell, Jr., Marine Recruiting Station, Nashville, to Post Troops, United States Marine Barracks, New River, North Carolina.

Philip Markle, Station Hospital, Maxwell Field, Alabama, to Army Air Forces Classification Center, Nashville, Tennessee.

Mallory Harwell, School of Aviation Medicine, Randolph Field, Texas, to Souther Field, Americus, Georgia.

C. W. Ingle, Station Hospital, Fort Jackson, South Carolina, to 0-320720, Tenth Evacuation Hospital, A. P. O. 923, U. S. Army, care Postmaster, San Francisco, California.

John D. Hughes, Memphis, to Station Hospital, Fort Oglethorpe, Georgia.

Lewis C. Ramsay, Memphis, to 0-371769, 804th Engineers, A. P. O. 957, care Postmaster, San Francisco, California.

John R. Olson, Nashville, to Company G, 102d Medical Regiment, A. P. O. 960, care Postmaster, San Francisco, California.

H. O. Bolling, Fort Benning, Georgia, to 21st Station Hospital, Fort Bragg, North Carolina.

Walter C. Humbert, Camp Beauregard, Louisiana, to Camp Livingston, Louisiana.

Cecil H. Brown, Jackson, to Medical Detachment, 70th C. A. (S. A.) Force 6814, A. P. O. 502, care Postmaster, San Francisco, California.

Richard Taylor, Jackson, to 0-345886, A. P. O. 916, Fourth General, care Postmaster, San Francisco, California.

John W. Anderson, Nashville, to Technical Training Squadron, T. S., care Floridian Hotel, Miami, Florida.

Captain Philip Metrie Markle of Memphis, Tennessee, has been assigned to duty as a flight surgeon at the Army Air Forces Classification Center, Nashville, Tennessee. Captain Markle has qualified himself as a flight surgeon and as a qualified pilot.

DEATHS

Dr. Frank B. Kimzey

Dr. Frank B. Kimzey, Union City; Vanderbilt University School of Medicine, Nashville, 1926; aged forty-one; died May 15, 1942, of angina pectoris.

Dr. Ambrose L. Jones

Dr. Ambrose L. Jones, Greenback; University of Louisville, School of Medicine, 1896; aged seventy-three; died July 4, 1942.

Dr. John Wesley Sutton

Dr. John Wesley Sutton, Petersburg, R. F. D.; University of Tennessee, College of Medicine, 1892; aged seventy-nine; died July 16, 1942.

Dr. George C. Horne

Dr. George C. Horne, Jonesboro; Chattanooga Medical College, 1898; aged seventy-one; died July 19, 1942.

Dr. James Clyde Overall

Dr. James Clyde Overall, Murfreesboro; Chattanooga Medical College, 1907; aged 61; died suddenly, August 9, 1942.

Dr. Olon H. Coleman

Dr. Olon H. Coleman, Major, Medical Reserve Corps, United States Army; graduated from University of Tennessee, College of Medicine, Memphis, 1932; was called to active duty January 15, 1941, and served as registrar at Station Hospital, Camp Blanding, Florida, until May 1, 1942; formerly connected with Tennessee Public Health Department at La Follette, Tennessee; aged thirty-four; died July 20, 1942, in African Middle Eastern theatre of war of natural causes.

NEWS NOTES AND COMMENTS

Dr. Raymond R. Crowe, Nashville, has been elected as governor of the American College of Chest Physicians at the annual meeting of the college held at Atlantic City, June 6, 7, 8, 1942.

Dr. Frank Whitacre, formerly of Metamora, who was imprisoned by the Japs at the fall of Manila, is well and has been returned to Peiping, China, according to a message forwarded to his family by the Red Cross. He was en route to America from China when he fell into enemy hands.—*The Ohio State Medical Journal*, August, 1942.

With the permission of the author, we are publishing in this issue an address by Dr. W. A. Beck, professor of clinical medicine, Meharry Medical College, Nashville, Tennessee.

While this address was delivered over the national hookup on one of the most popular programs, we feel sure that some of our readers failed to hear it, and it is reproduced because of its great importance to the medical profession in Tennessee.

Doctor Beck is well qualified to discuss this question, as he has for years conducted a large tuberculosis clinic in connection with his college work.

Tuberculosis and the Negro*

"Someday historians will record the fact that the Negro's tuberculosis case finally got a hearing at the great bar of justice. Without a doubt this dreaded disease is coming under control. However, the length of time needed to accomplish this feat will depend wholly on the vigorousness with which we concentrate our attack on those areas and groups of people among whom the disease flourishes. Briefly speaking:

"1. Tuberculosis is still the leading cause of death in the age period of fifteen to forty-five years.

"2. In the past thirty years the mortality rate for the white race has been reduced from first to seventh place, whereas the mortality rate for the colored race has only been reduced from first to second place.

"3. There are 250,000 active cases of tuberculosis among Negroes, and 260,000 silent cases.

"4. Tuberculosis in Negro children deserves special emphasis since the greatest disparity between tuberculosis in the white and Negro is manifested in Negro children.

"Absolutely no program for the control and eradication of tuberculosis can hope to be successful unless the opportunities for hospitalization and facilities for treatment are available equally to Negroes and to whites.

"An excellent picture of the inadequacy of hospital beds and facilities for the treatment of tuberculous Negroes can be seen from the following statistics from the National Tuberculosis Association: There were 15,883 deaths in 1940, with a bed capacity of 7,066 specifically for Negroes. In the thirteen Southern States, where two-thirds of the nation's Negro population lives, a still more serious condition existed. Thus we see that with 15,883 deaths annually and with only 7,066 beds—8,817 human beings are sacrificed at the altar of insufficient accommodation.

"An example of the Southern States taking the lead in solving the problem of tuberculosis among Negroes, mention may be made of Arkansas, Texas, and Kentucky. These states have separate tuberculosis hospitals for Negroes which are staffed by Negro physicians and nurses. Florida and North Carolina have separate wings for

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*"Wings over Jordan," Station WCHS, Charleston, West Virginia, July 12, 1942.

Negro tubercular patients and Negro physicians are permitted on the staff.

"Governor Prentice Cooper has promised participation by Negro physicians and nurses in the extensive tuberculosis program that is being inaugurated in Tennessee at present. This will be another example of the good that can be accomplished by opening the doors to Negroes.

"There is a wealth of clinical material in all of the tax-supported tuberculosis and general hospitals of this country; if provisions for Negro doctors could be arranged on a larger scale, an opportunity for study and observation in these institutions would be a great step forward for America.

"There could be no better approach to conquering this deadly germ than to provide better training for Negro physicians and nurses in the modern methods of handling it. A much greater opportunity for clinical experience is necessary, if we are to reach a goal of training enough Negro physicians to cope with this scourge.

"While the enterprising Negro general surgeons of the South have done a Herculean job with respect to phrenic nerve operations, thoracic drainage, rib resections, and the like—especially trained chest surgeons are acutely needed. As far as I know, we do not have a single well-trained Negro chest surgeon in all the Southland. The North and Eastern sections have provided about six recognized Negro chest surgeons.

"This arbitrary goal requires that within the next five years, in a given community of a sufficient number of Negroes, at least one Negro physician must be trained to administer pneumothorax treatments: and during a second five-year period we must have at least one well-trained Negro chest surgeon for every large Negro populated center.

"We would like further to have established at Meharry Medical College and Howard University great centers of postgraduate training in tuberculosis. Students would then become more tuberculosis conscious. Physicians in practice could return for advanced training, and many could be encouraged to do valuable research in the field.

"The Negro physicians of this country are pleading to hospital boards, hospital administrators, health officers, public-spirited citizens, and to the great medical profession of these United States of America for permission—in a larger measure—to acquire adequate knowledge and training so that we may help to stop tuberculosis, which is the Axis enemy here in America."

MEDICAL SOCIETIES

Anderson-Campbell Counties:

The Anderson-Campbell Counties Medical Society held a meeting at Clinton in the Park Hotel on July 30. Dr. W. S. Austin of Knoxville was the speaker. A luncheon preceded the meeting.

Hamilton County:

August 6—"Gold in the Treatment of Arthritis," by Dr. C. R. Thomas.

September 3—"Ocular Manifestations of Intracranial Disease," by Dr. Stewart Lawwill.

Wilson County:

On August 6 Dr. J. L. Ames' subject was "The Present-Day Treatment of the Anemias." Dr. R. C. Kash presented a case report.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Postoperative Hypoprothrombinemia and Anesthesia. J. Garrott Allen, M.D., and H. Livingstone, M.D. Anesthesia and Analgesia, September-October, 1941.

Postoperative hypoprothrombinemia, so often seen in patients with obstructive jaundice and biliary fistula, has been the subject of much controversy. Some authorities claim that anesthesia was the cause. The coagulating factor falls following acute liver damage, which was laid to anesthesia. In a study of 106 cases with no icterus, bile fistula, or apparent liver damage undergoing major operative procedures using diethyl ether, divinyl ether, ethylene-oxygen, nitrous oxide-oxygen, avertin, novocain, and nupercaine spinal anesthetics, there appeared but one case of prothrombin reduction.

In a series of fifteen cases with biliary fistula or obstructive jaundice, twelve showed reduction of prothrombin after operative procedures. The authors claim that this is due to a deficiency of vitamin K and bile salts. This is proven by a rise to normal in ten to twenty-four hours after an adequate amount of these substances have been administered. Therefore, this condition is not caused by anesthetic agents except in the case of chloroform.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Mustard-Gas Injuries to the Eyes. W. F. Hughes, Jr. American Journal of Ophthalmology, July, 1942.

This review includes a discussion of the incidence and dose necessary to produce a lesion, the course of severe corneal burns, the local and systemic actions of the gas, prophylaxis, and the treatment of the patients without corneal involvement and with corneal involvement. The treatment, which is largely symptomatic, consists of reassurance of the patient that he is not blind by opening the swollen lids, immediate irrigation of each eye for two minutes with 1.5 per cent sodium bicarbonate solution, physiologic salt solution, two per cent boric acid solution, or .5 per cent solution of dichloramine-T in chlorinated paraffin, and in cases with corneal involvement or marked photophobia, instillation of one per cent atropine solution or ointment every day until the symptoms or the iritis subsides. In cases of severe involvement the author advised the instillation of liquid paraffin, cod-liver oil with added sodium bicarbonate and dextrose, or acriflavin in castor oil (1 to 15,000) three times a day, but not sooner than twenty-four hours after the exposure to the gas. Dark glasses or a brown eyeshade are advisable, but should be worn for shortest possible time in order that the development of neurasthenic symptoms may be avoided. Bandages or eye pads should not be used. Instillation of mild silver protein solution (ten per cent) followed by irrigation with boric acid solution may be used three times a day to prevent secondary infection. After the initial chemotic and exudative reaction has subsided, the use of zinc sulphate solution (.25 per cent) with epinephrine is recommended during convalescence. Psychiatric care is often advisable in serious cases to prevent chronic neurasthenia and hysterical reactions.

ROENTGENOLOGY

By J. Marsh Frere, M.D.
Newell and Newell Sanitarium, Chattanooga

March Fracture. George R. Krause, M.D. Radiology, Vol. 38, No. 4, p. 473, April, 1942.

The author has brought a timely subject to our attention. The term "March Fracture" is applied to fracture of a metatarsal occurring in persons who have experienced prolonged and repeated foot strain.

Hundreds of thousands of young men are now entering the Army. In the course of their military service these men will walk distances much greater than they were accustomed to walking in civil life, and as a result this otherwise infrequent clinical entity is certain to increase.

This syndrome was brought into prominence during the first World War, although it had been described as early as 1855 by Breithaupt, a Prussian military surgeon. Stechow (1897) is credited with first making the diagnosis by means of roentgenogram and demonstrating the presence of a fracture.

The author saw only one case in three and a half years prior to entering active duty with the Army, but has seen nine cases in six months at the Station Hospital, Fort Jackson, South Carolina.

Summary and Conclusions

Attention is drawn to the syndrome of "March Fracture." This entity will undoubtedly be seen more frequently as the military forces are expanded. Ten cases have been seen by the author. One typical case history is presented.

The important diagnostic points are: absence of a history of direct trauma; pain on the plantar surfaces of the metatarsals with each step; localized tenderness over the second or third metatarsal; edema of the dorsum of the foot. The onset may be sudden or gradual.

This syndrome known as "march foot" or "march fracture" may be divided into four stages on the basis of the roentgenographic findings. During the first ten days following the onset of symptoms, an incomplete, narrow fracture line may be present, but failure to demonstrate such a fracture line does not exclude a "march fracture." In the second stage, from one to three weeks after onset, a spindle-shaped callus is seen around the second or third metatarsal and the fracture line is often visible. The amount of callus is usually large in proportion to the extent of the injury. In the third stage, after immobilization, the callus is smaller, denser, more sharply circumscribed, and the fracture line may still be visible. In the fourth stage the only findings is a slightly thickened cortex. A higher percentage of these fractures can be diagnosed in the first stage if technically perfect roentgenograms can be obtained.

The treatment is the same as for any fracture in this region.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

Influence of Diet on Blood Pressure and Kidney Size in Dogs. F. M. Allen and O. M. Cope. Journal of Urology, June, 1942.

Allen, Loesch, et al., were the first to study the explanted spleen and kidney, also the first to produce experimental chronic renal hypertension.

The purpose of their work was to study the influence of vascular spasms in the renal and general circulation, also to examine the condition and function of the kidneys under various conditions. Their work was interrupted before completion and later workers have failed to carry out the broad purpose for which these methods were originally devised.

In this paper is presented the observations upon the influence of diet and salt upon the blood pressure in the dog, largely with explanted kidneys. The dogs used in these experiments ranged from normal through various degrees of chronic hypertension. The femoral and brachial blood pressure readings were taken by an auscultatory method. In the salt diet the dogs received fifteen to twenty grams of table salt daily. The protein diet consisted of various types of meats.

In the dogs whose kidneys were explanted, the kidneys were freed and placed just beneath the skin, where they could be observed as to size, etc. Further details of the experiments will not be outlined here for brevity.

The observations demonstrated an increase of blood pressure with the salt diet. The diuretic labor resulting from salt or water, and especially from the two together, was accompanied by a transitory kidney swelling, due essentially to hyperemia. This labor, however, failed to cause true renal hypertrophy when the salt and water was long continued.

The protein diet did not elevate the blood pressure, but tended to reduce it. The diuretic labor from protein was accompanied by a much less degree of temporary swelling, attributed to hyperemia. However, a long-continued protein overload gave rise to a gradual and longer lasting enlargement, which was interpreted as true hypertrophy.

BOOK REVIEW

A new textbook on Red Cross Home Nursing, written in a simple, popular style, yet bearing the stamp of approval of authorities in the fields of nursing, medicine, and public health came off the press in July. Two million copies have been ordered by the Red Cross for the use of homemakers, and in Red Cross home nursing classes throughout the country.

The publication is divided into four sections: "Health and Happiness in Home Life"; "How the Community Protects the Health of Home and Family"; "How to Take Care of Mother and Baby"; and "What to Do When Sickness Invades the Home." The book is priced at sixty cents and is illustrated with about 100 pictures and drawings, many of them helpful in teaching home nursing procedures. It may be procured from any Red Cross chapter.

Various sections of the book have been read and approved by a number of specialists in their respective fields.

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ANTHONY'S MILK
• Grade "A" Pasteurized • Homogenized • Soft Curd • Vitamin "D"
With 400 U.S.P. Vitamin D Units (Activated Ergosterol) Added Per Quart Under A.R.P.I. Process

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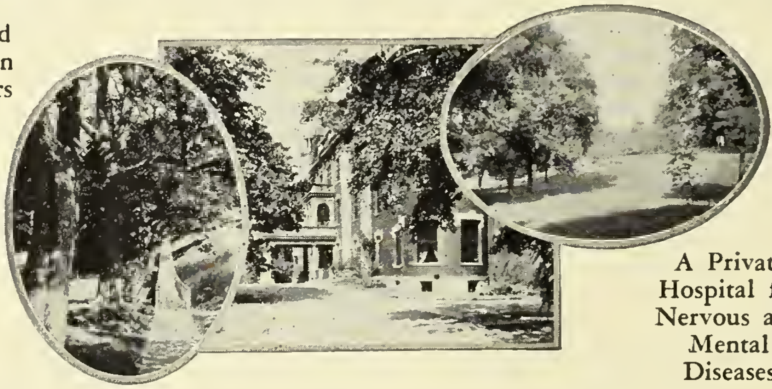

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INTESTINAL DRAINAGE—USES AND ABUSES IN OBSTRUCTION*

BARNEY BROOKS, M.D.,† Nashville

There is at the present time, I am quite sure, a lack of appreciation of some of the elemental principles involved in the treatment of intestinal obstruction by the continuous indwelling tube. This confusion, I am inclined to believe, has come about because certain phases of both the disease and the treatment, although secondary, are of such importance as to have led both clinical and experimental investigators to consider them as primary. For example, the distention of the intestine which follows obstruction is an extremely important factor in causing the development of symptoms and death. It is, however, not the cause of intestinal obstruction. In like manner one hears of the Wangensteen method of treatment of intestinal obstruction, and the reality is that Doctor Wangensteen invented an apparatus for the more effective application of an old method of treatment. It is the purpose of this paper to give you a brief report of the background of our knowledge concerning intestinal obstruction and the use of the stomach tube.

For the past twenty-five years the reports of both clinical and experimental investigators of the pathogenesis of intestinal obstruction have dealt almost exclusively with distention, loss of fluids, loss of electrolytes, disturbance in hydrogen ion concentration, loss of plasma, hemoconcentration, and diminished blood volume. There is not the slightest doubt but what all of these phenomena contribute to the development of symptoms and cause of death in intestinal obstruction, but there is not a single one of these factors which is peculiar to intestinal obstruction and which is not a contributory factor in the production of symptoms and death from many other conditions quite unrelated to obstruction of the intestinal tract. The reality of intestinal obstruction lies in the fact that the intestinal tract is an epithelial-lined tube which contains a vast amount of material that is quite as much outside the animal's body as is the multitude of noxious organic and inorganic materials with which the skin of an individual comes in contact. The contents of the intestinal tract are not suitable for being taken into the circulation any more than the grease or grime of a workman's hands. The intestinal tract, therefore, has epithelium covering the surface of a large area which is constantly bathed with substances which, if introduced into the circulation, would produce disastrous results. These substances are not absorbed into the circulation because the epithelial cells lining the intestinal tract under normal conditions absorb only such substances as are suitable for entering the body, and exclude from the usual intestinal contents those things which are deleterious. It does not make a great deal of difference whether one accepts the idea of a specific toxin being formed within the lumen of the intestine after obstruction or not, for there is always within the lumen of the intestine a large amount of substance which is toxic if it is introduced into the circulation. It seems to me unavoidable to escape the conclusion that damage to the mucosa is the fundamental and primary pathological process which initiates disease in intestinal obstruction; and I believe it is without reasonable doubt that strangulation or distention is universally the immediate cause of damage to the mucosa in intestinal obstruction. The acceptance of this conclusion does not at all minimize the importance of many other factors which may or may not be directly related to the absorption of toxin from the lumen of the intestine. Acceptance of this conclusion is to acknowledge the value of the employment of any method which would prevent distention, and is as clear-cut an indication of the uselessness of the employment of the same method in intestinal obstruction associated with strangulation.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

†From the Department of Surgery, Vanderbilt University, Nashville, Tennessee.

Kussmaul is credited with first suggesting the employment of the stomach tube for the diagnosis and treatment of diseases of the stomach, and I believe this was the sole use of the tube until about the beginning of the present century. It is important to emphasize that the mere passage of a tube into the stomach will not result in the spontaneous emptying of the contents of the stomach through the tube. During the early period of the use of the stomach tube, the contents of the stomach were actually withdrawn by means of a piston pump, and to this day one still hears occasionally of someone having his "stomach pumped out." For reasons which I will not take time to discuss, the piston pump was completely replaced by the employment of the tube as a siphon, and it is an interesting fact that the siphon has played a large part in the development of our present indwelling tube drainage of the stomach or intestine.

There seems to be very little doubt that, in this country at least, the importance of the use of the stomach tube in surgery was first emphasized by that great philosopher of surgery, Albert J. Ochsner. The fact that Doctor Ochsner not only used the stomach tube occasionally, but that he advocated its use so frequently as to constitute at least something approaching continuous drainage, is evident from his famous expression, "A good medical house officer should always carry a stethoscope around his neck, but a good surgical house officer will substitute a stomach tube for the stethoscope." I happen to have had my early surgical training under the direction of one who had a profound respect for Ochsner's teachings, and I can personally testify to a period of carrying a stomach tube about the neck. The tube which was in use at that time, because of its size and rigidity, could not be left in place, and I certainly entertain no particularly happy memories of the trials and tribulations necessitated by its frequent passage into the stomach; but I can attest to the fact that frequent emptying of the upper portion of the gastrointestinal tract was considered a tremendously important part of the treatment of intestinal obstruction.

The introduction of the small, soft-rubber tube was a great improvement in technic because this tube could be left in place, and it was therefore only necessary at more or less frequent intervals to re-establish the siphon. The good surgical house officer, therefore, did not carry a stomach tube about his neck, but he did carry a Politzer bag in his pocket, until the tremendous advance in technic by Doctor Wangensteen, who devised an apparatus which would automatically remove the gas and restore the siphon.

The most recent improvement in technic has been the invention of the Miller-Abbott tube, which is, after all, an addition to the end of the Levine tube of a rubber balloon which can be inflated or deflated at will by a separate tube. The inflation of the balloon at the end of the stomach tube makes it possible for the tube, after once passing through the pyloric ring, to be carried even through the entire length of the intestinal tract.

This development has placed in the hands of the surgeon an extremely effective and efficient method of relieving distention in the intestines, which may be accomplished, even though the patient continues to take relatively large amounts of fluid by mouth.

In the employment of an indwelling tube for the relief of distention of the intestinal tract, it is of tremendous importance that the surgeon remember that this therapeutic method, like all others of which I know, produces a combination of desirable and undesirable results, and in any particular instance the indications for its use must be that the desirable effects outweigh the undesirable effects, or there is a method of compensation for the undesirable results. It is therefore worth while pointing out a few of the undesirable results which come from the continuous removal of the contents of the intestinal tract.

By far the most obvious effect of continuous drainage from the gastrointestinal tract is the abstraction of fluids from the patient's body. One has only to remember that the liver puts out 1,500 to 2,000 cubic centimeters of bile per day; the pancreas 1,000 cubic centimeters of pancreatic juices; and an unknown amount of fluids pour into the lumen of the intestine from the mucosa of the stomach, duodenum, and jejunum. If all of this material were abstracted from the patient's body each twenty-four hours, it is obvious that the individual would lose three or more liters of water; but this fluid contains other materials essential to the body. The bile pigments are derived from hemoglobin, and all of the fluids contain protein, which in turn must be taken from the circulating blood; and even more important is the fact that all of these fluids contain the same amount of sodium chloride which is present in an equal volume of normal body fluids. Fortunately, it is relatively easy to compensate for the loss of water and sodium chloride; and in every instance in which a patient has an inlying, continuously-draining tube, the surgeon must have a careful record of the amount of water and salt lost, which can be restored to the patient's body by subcutaneous or intravenous infusion.

There is still another phenomenon associated with intestinal drainage which is not so generally appreciated. If the patient has lost a large amount of fluid through an inlying tube, one of the most certain effects is that the patient becomes exceedingly thirsty, and it has been found that, with a tube which is draining well, a patient may be given as much water to drink as he likes. Now if water is introduced into the stomach or intestine, there is an immediate passage of sodium chloride from the walls of the intestinal tract into the water until the concentration of sodium chloride in the water rises to the same level as that which exists in the body fluids. In other words, if a stomach would be filled with distilled water and left for a period, enough sodium chloride leaves the body and enters into the stomach contents to make the stomach contents normal physiological salt solution. If sodium chloride alone is abstracted from the body, the body fluids become hypotonic, and a corresponding amount of water is excreted through the kidneys, and thus we find the remarkable situation in which the more water a patient drinks, the more his body becomes desiccated. It is important, therefore, in continuous drainage of the intestinal tract of a patient who is allowed to have water that the patient be given a sufficient amount of salt in tablets to make the water isotonic in body fluids.

Time does not permit of a discussion of the other undesirable processes which are initiated by continuous drainage of the intestinal tract; and in practice I believe that, if a surgeon carefully controls the loss of water and loss of salt, he will very likely also control the other deleterious influences of continuous intestinal drainage.

In conclusion, therefore, I wish to emphasize again the great value of the employment of the indwelling tube for continuous drainage from the intestinal tract, or with the Miller-Abbott tube extending drainage to the lower level for the relief of distention of the intestinal tract; but it is equally important to emphasize the uselessness of the employment of intestinal drainage in instances of intestinal obstruction in which there is interference of blood supply to the intestine from some other cause than simple distention; or in instances in which the obstruction is so low that the most distal distended loops are not emptied. Constant drainage is not always to be substituted for operation, even in simple obstruction without strangulation. It is particularly suitable for a patient with simple obstruction of the intestines with distention in which the cause of the obstruction presumably will disappear spontaneously; as, for example, in a postoperative intestinal obstruction, or any obstruction occurring during a convalescence from a preceding general peritonitis. If a patient has recurring attacks of intestinal obstruction from adhesions which have existed for a long period of time, and if the patient is still in good condition, I believe that immediate operative treatment is to be preferred because it is only when the adhesion is producing a certain amount of obstruction that it can be identified with certainty.

DISCUSSION

DR. J. L. McGEHEE (Memphis): I am in a rather embarrassing position. When I noticed the title of Doctor Brooks' paper, I assumed that he was going to open the question of the use or abuse of enterostomy, so having prepared a discussion on the abuses of enterostomy, since that subject was not brought up in the paper, any discussion of enterostomy at this time would not be germane.

What he has said about the underlying principle of treatment is complete, and I have no desire to add to or subtract from what his paper stated. Of course, the underlying principles of treatment of intestinal obstruction are two: mechanical relief and replacement therapy. It is fundamental also that, in those cases in which the indwelling catheter is used and large quantities of fluid and electrolytes are drained from the intestinal canal, replacement therapy must be used to balance this loss. Continuous excretion of salt and water must be checked daily. This water and sodium chloride must be replaced parenterally.

There can be no abuse of the method if it is intelligently used. Its failure, as a rule, results from the employment and the application of those physiological principles involved improperly. It is the consequential vascular change in the intestinal wall that is the fatal factor in intestinal obstruction. The theory of intoxication in intestinal obstruction has about been abandoned. Substituted therefor we have the chemical theory, but continuous intestinal deflation is fundamental. Orr showed a good many years ago that an intestine whose walls were not damaged by distention and the consequential changes in its vessels will not absorb toxins. Absorption of the so-called toxins takes place when distention has reached that degree in which changes have taken place and pathology locally is such that absorption takes place at once.

I am sorry he did not bring up the question of the use and abuse of enterostomy. In these latter days it seems to be the prevailing opinion that enterostomy is a useless procedure. It has been generally accepted by surgeons as a therapeutic measure in certain types of intestinal obstruction and distention of peritonitis. There has never been universal accord regarding its indication or regarding its therapeutic value. There has been a recent survey by Van Buren and Smith, a statistical study, they called it, indicating that enterostomy had not reduced the mortality rate of intestinal obstruction. These statistics are of questionable value because of the fact that no proper consideration was given to the fact that enterostomy has been done as a last-resort measure or as a gesture of despair and not enough thought has been given to its limitations and its indications. In fact, another group reported that the mortality was greater in those patients who had been subjected to enterostomy than those who were not. Well, it is an indisputable fact that more patients die who have had a medical consultation than those who have not. The simple reason is that medical consultation is usually held after the battle is lost, so these statistics simply prove the old adage that you can prove anything by statistics, even the truth.

It seems that too much has been expected of enterostomy and not enough consideration given to its limitations. Many men probably will take issue with me, but bearing in mind that the basic principles of the treatment of intestinal obstruction are replacement therapy and mechanical relief, enterostomy as a drainage operation is logical. Its use is logical when based on the pathology of the intestinal wall and the disturbed physiology. In certain well-selected cases it is still a valuable surgical procedure, synergistic to replacement therapy, and it is my belief that, when done early enough and not as a last-resort measure, the statistics regarding the mortality of intestinal obstruction will be greatly improved.

This has been one of our clinical problems for a number of years. Speaking now particularly of the use of enterostomy, which, of course, is used in conjunction with substitution or replacement therapy, I may sum up our experience by saying that we have regretted not doing it, but never have we regretted doing it. It is not an operation to be done routinely. The type of enterostomy done is of no particular value. Personally, I think the Witzel technic is the safest procedure. It is not followed by fistula formation if it is properly done, and if the intestine upon which it is done is properly selected.

Enterostomy is a useful method of draining away fluid and gases and allowing the edema and spasm to subside, because it has been shown before that the ultimate factor in intestinal obstruction is edema and spasm. In no other way might you explain the spontaneous recovery of intestinal obstruction cases than on the basis of the ultimate factor being edema and spasm, so when you drain an intestine, either by suction siphonage or by combination of suction siphonage and a well-placed enterostomy, you certainly deflate the intestine, draining away gas and fluid, put the bowel at rest, and time is gained for the subsidence of the spasm and the return of tonus.

I hope that Doctor Brooks will take advantage of his rejoinder to give us his views on enterostomy, because I too think that it is being greatly abused, that it is being improperly used, and the consideration of the conditions for which it may be used is being lost sight of by the average surgeon.

To get the matter before you, we might list it in this way: enterostomy may be indicated—I will not say it is indicated—but it may be indicated as a preliminary operation in intestinal obstruction; as an adjunct to exploration and release of intestinal obstruction; as an adjunct to intestinal resection in a volvulus or any other strangulation; in a great many cases after operative relief of intussusception. After the reduction of an intussusception, with the edema and distention of the proximal loop when you hold it, you hesitate to drop it back into that abdomen and close the abdomen with the enormously distended loop, which shows evidence of distention by its color and its consistency, indicating that it has been severely traumatized. You have no actual way of knowing the exact condition of the vascular supply of that intestinal wall, so in these cases after the reduction of the intussusception or, if necessary, after the performance of the resection, an enterostomy in this group of cases is lifesaving most frequently. As I say, I have never regretted doing one in this group of cases, and unfortunately I have regretted not doing it in a few. It is indicated, I think, in peritonitis of the lower abdomen with obstruction.

DR. M. B. DAVIS (Nashville): This, to me, has been one of the greatest steps forward in intestinal surgery, and one of the greatest abuses, as I see it, is that sometimes an indwelling tube with suction gives us a false sense of security.

I would like very much for Doctor Brooks to go more into detail on these types of cases that have an obscure mechanical obstruction. These patients are all markedly benefited and there is always a question in my mind if I am not overlooking a golden opportunity with a false sense of security that sometimes the indwelling suction tube gives us.

DR. BARNEY BROOKS (closing): Mr. Chairman, I cannot agree with Doctor McGehee that the theory of intoxication in intestinal obstruction has been abandoned. It was the purpose of the remarks which I made in the beginning to emphasize my belief that there are errors in the treatment of intestinal obstruction because of the failure to keep in mind the mechanism of intoxication peculiar to intestinal obstruction.

Distention of the intestine has been proven over and over again to produce damage to the mucosa which permits of the entrance into the circulation of toxic substances from the intestinal lumen.

I do not in the slightest belittle many of the associated changes which occur in intestinal obstruction. In fact, it was shown before the demonstration of the toxic factor that the administration of fluids would keep animals alive for much longer periods of time. There is not the slightest doubt in the world but that the loss of fluids and sodium chloride is an important factor in intestinal obstruction, but, on the other hand, the essential of intestinal obstruction is the absorption of toxic materials from the intestinal tract.

The indwelling tube and enterostomy are both solely for the purpose of the relief of distention. I have changed my views within the past few years concerning the use of enterostomy. As Doctor McGehee has very correctly stated, if an enterostomy is done when there is no peristalsis, it does not do any good.

If, however, normal peristalsis is present, I am inclined to believe that the indwelling tube will, in the great majority of cases, accomplish exactly the same thing that the enterostomy accomplishes.

The abuses of the indwelling tube, I think, are mainly the failure to replace fluid and salt that are lost, and the use of this tube beyond the period in which it is necessary. As Doctor Davis brought out, there is no sense in having an indwelling tube draining a patient's stomach when the abdomen is perfectly flaccid. It should be clamped off at such times as that. Doctor Davis is correct in saying that the indwelling tube may at times mask the symptoms of intestinal obstruction, and that patients may die of intestinal obstruction when treated with indwelling tubes, who might have recovered if operated upon. In such instances we are dealing with intestinal obstruction in which there are other causes of damage to the mucosa. If the distention is not relieved by the indwelling tube, certainly operation is indicated.

PUERPERAL STERILIZATION*

H. P. HEWITT, B.S., M.D., F.A.C.S.,† AND E. F. McCALL, M.D.,† Chattanooga

In 1932 Skajaa[1] reported 126 cases that were sterilized during the puerperium. Since that time reports have appeared in the literature from various clinics, and at the present time we believe that the combined series is sufficiently large to state that the procedure of puerperal sterilization is a safe, sound, and satisfactory procedure.

Since there is no special law dealing with sterilization in Tennessee, we follow the procedure of having two physicians state that it is to the best interest of the mother's health that she should be sterilized. A slip is signed by the patient and her husband, giving permission for sterilization, and at the time of the operation we have the chief of the prenatal clinic with the attending man on the indoor service to sign the prenatal record, recommending puerperal sterilization.

Prior to the report of Skajaa it was a generally-accepted custom to perform sterilizing operations several months after delivery. This, of course, required a second hospital admission with its attendant cost to the community for service patients.

In our clinic about forty per cent are Negroes, and we have noted that many who should be sterilized and were not operated upon during the puerperium would return in several months pregnant again.

It has also been difficult for us to convince patients to return at a future date for operation because those who needed it most were usually tired of the hospital by the time they had spent varying periods of time ante partum in the hospital under observation for toxemia, cardiac disease, or other forms of chronic disease that made sterilization necessary.

There have been no Caesarean sections in our clinic, with the only indication for section sterilization, since we have instituted the practice of puerperal sterilization.

Two hundred sixty-seven puerperal sterilizations have been performed on the obstetrical service of the Baroness Erlanger Hospital since July of 1939. One of us (Hewitt) reported 100 cases in a previous report. In the present report we wish to present a follow-up of those cases with an analysis of an additional 167 cases.

INDICATION

In this series the indications are shown in Table I.

TABLE I

Indication	*Number*
Multiparity, social and economic conditions	193
Active pulmonary tuberculosis	5
Cardiac disease	3
Hypertension and/or chronic nephritis	60
Pyelonephritis (chronic)	2
Syphilis	1
Mental disease	3
Total	267

Of this group 211 were white and fifty-six colored—the youngest seventeen years and the oldest forty-two years. The average age was 27.2 years and the average number of babies per patient was 5.03.

As Table I indicates, the majority of these women were sterilized for social and economic conditions or excessive multiparity. We believe that we were justified in sterilizing this group of women because all of them were from the lowest strata of society and contraception had been tried and failed chiefly because of ignorance and superstition.

CHOICE OF OPERATIVE PROCEDURE

The choice of technic is at present a matter of personal opinion, as failures have been reported with all known technics. There is no sure operative method of sterilization short of bilateral oophorectomy.

Adair and Brown[2] report fifty cases done by the Madlener technic—Pfuetz[3] a series of 165 done by the same technic. Thornton and Williams[4] report 209 cases with the majority done by the Pomeroy technic—McClellan and Burch[5] favor the vaginal route, using a modified Pomeroy technic. Skajaa's original series was done by cornual resection. The morbidity, complications, and end results were approximately the same for each series.

The methods used in our series are shown in Table II.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

†From the Department of Obstetrics of the Baroness Erlanger Hospital.

TABLE II

Method	*Number*
Madlener	111
Cornual resection	20
Triple ligation	133
Pomeroy	3
Total	267

CHOICE OF OPERATIVE TIME

The day post partum with morbidity and complications is shown in Table III.

TABLE III

Post-Partum Day	*Number of Operations*	*Number Morbidity*	*Percentage Morbidity*	*Complications*	
1	161	20	12.4	1 1 4	Thrombophlebitis Pyelitis Endometritis
2	38	4	10.52	1 1	Bronchitis Endometritis
3	45	4	8.8	1	Wound infection
4	15	0	0	0	
5	5	1	20.0	1	Endometritis
6	1	0	0	0	
7	1	0	0	0	
8-13	1	0	0	0	
Total	267	29	10.4	10	

Adair and Brown and Russell[6] advocate that all post-partum sterilizations be done within the first twenty-four hours after delivery. Skajaa in his report had forty-six cases that were operated upon between the fifth and twenty-ninth days post partum, and of this group there were eight cases of thrombosis and embolism, five of them occurring in twelve cases done on the fifth and sixth day. Pfuetz reports a morbidity of 13.7 per cent for those done on the first day in comparison to a total morbidity of 18.3 per cent of his entire series.

Our records tend to bear out the statement of Thornton and Williams, and I quote: "The time post partum that the operation is performed does not seem to be associated with any significant variations in the incidence of morbidity or complications."

We used as our standard the standard of morbidity adopted by the American Committee on Maternal Welfare (100.4 degrees Fahrenheit or over on any two days after the first twenty-four hours post partum—oral temperatures taken at least four times daily). In our series of 267 cases twenty-nine showed a morbidity by this standard, or a percentage of 10.4. This compares favorably with other reported series.

One hundred sixty-one, or 60.2 per cent, of our patients were sterilized within twenty-four hours post partum, but there seems to be no appreciable difference in morbidity or complications to those done later in the puerperium as indicated in Table III.

One case of thrombophlebitis occurred. This was in a white patient who was operated upon under ether anesthesia within one hour after a normal delivery. This patient recovered and was discharged on her thirty-first hospital day. There has been one low-grade wound infection. There have been no deaths on service patients. However, Hewitt reported one death in his initial report on a private patient who, in the light of our present-day knowledge, should not have been operated upon. She died on the eleventh postoperative day of cerebral embolus. Of the twenty-nine who showed a morbidity only four were required to remain in the hospital longer than the usual eighth postoperative day.

We are of the opinion that the selection of patients for sterilization plays a greater role in subsequent complications and morbidity than the time post partum at which they are operated upon.

The management of our cases during labor who are candidates for sterilization is ultraconservatism. Vaginal examinations are prohibited except in rare instances. Medical inductions have not infrequently been employed, but mechanical inductions have been reduced to a bare minimum. Operative deliveries and perineal repairs are avoided when possible. When necessity demands operative interference, we prefer to wait and sterilize these patients several months later. All patients have had a hemoglobin of seventy per cent or above at the time of operation, and none have had colds or other minor chest complications that could have been sterilized under local anesthesia.

The choice of anesthesia is of some importance, and we believe that local anesthesia is the one of choice. Under heavy preoperative sedation (barbiturates), only a very few have been aware of the fact that they were being operated upon, and those who had previously been subjected to inhalation anesthesia expressed their appreciation of the local anesthetic.

FOLLOW-UP

Method	*Number Done*	*Number Follow-Up*	*Number Failures*	*Per Cent Failures*
Madlener	111	94	2	2.1
Pomeroy	3	3	0	0
Cornual resection	20	20	0	0
Triple ligation	133	98	6	6.1
Total	267	215	8	3.7

Triple ligation of the tubes with a nonabsorbable suture is comparable to the Madlener technic in simplicity, but the percentage of failure has been very much higher —6.1 per cent in comparison to 2.1 per cent. It is our opinion that this difference can be explained on the theory that the sutures have been tied too tightly, thereby cutting through the tube and affording it a better chance of canalization; whereas, with the Madlener technic a double loop of tube is ligated and the danger of this occurring is lessened.

Cornual resection probably offers the lowest percentage of failure and also has the advantage over other technics of preventing subsequent cases of salpingitis, which is not uncommon in our Negro patients. However, it is more time-consuming and on occasion can be quite a bloody procedure.

At this time we advocate the Madlener technic because of the ease with which it can be performed and its relatively good results.

SUMMARY

1. Herewith are presented 267 cases of sterilization at varying intervals from the first to the thirteenth day post partum.

2. The operation was performed by the Madlener technic in 111 cases, triple ligation of the tubes with a nonabsorbable suture in 133, cornual resection in twenty, and by the Pomeroy technic in three.

3. One hundred sixty-one, or 60.2 per cent, were done within twenty-four hours, but there seems to be no appreciable difference in morbidity or complications regardless of the day post partum on which the operation was performed.

4. The conservative management during labor of candidates for sterilization is stressed.

5. Twenty-nine, or 10.4 per cent, had morbidity on the basis of the standard of morbidity set by the American Committee on Maternal Welfare. Ten of these patients had complications, but only four were required to stay in the hospital longer than the usual time of eight days. There was only one case of thrombs phlebitis and only one low-grade wound infection.

6. There were no deaths in this series of service patients. There was one death in the private group, an obese patient with toxemia who died on her eleventh postoperative day from embolism.

7. Local anesthesia has been our anesthetic of choice.

8. We have had a follow-up on 215, or 80.5 per cent. There have been subsequent pregnancies in eight of these 215 follow-up cases, or a total failure of 3.7 per cent. Two, or 2.1 per cent, of these occurred in patients who had been sterilized by the Madlener technic. Six, or 6.1 per cent, occurred in those done by triple ligation.

9. The Madlener technic is our choice of procedures due to the ease with which it can be done and its relatively good results.

DISCUSSION

W. O. TIRRILL, JR. (Nashville): Doctor Hewitt's work on post-partum sterilization covers a period of four years, during which time 267 cases were operated upon, employing several accepted methods. His careful selection of cases, indications for operation, time of operation, morbidity and mortality, and follow-up reports compare favorably with the results of Amundsen and Sund of Scandinavia, Adair and Brown of Chicago, and Tiffany Williams at the University of Virginia.

Doctors Hewitt and McCall should be congratulated upon their conservatism and selection of cases, excluding for operation any case which has been manipulated and is thereby potentially infected, or those patients showing poor uterine tone or excessive blood loss.

Preoperative morphine-scopolamine seminarcosis with local anesthesia, supplemented if necessary by gas-oxygen, seems preferable.

The 133 cases in which triple ligation of the tubes was performed showed a six per cent failure, which is rather high, and this type of operation is generally considered unsatisfactory. Similar figures on a large series were recently reported from Puerto Rico. The Madlener, Irving, or Pomeroy types of operation seem to result in more complete tubal sterilization.

Protection of the health and welfare of the mother should be stressed as the indication for sterilization rather than social and economic conditions in 193 of the 267 cases reported by Doctor Hewitt.

At Vanderbilt, Burch and McClellan have preferred a modified Pomeroy type of tubal sterilization by the vaginal route in selected cases remotely post partum. To date, there have been no reported failures by this method, hospitalization has averaged four days, the morbidity has been quite low, there have been no deaths. Recently, a few abdominal tubal sterilizations have been employed there at the end of the first week following delivery. This obviates the possibility of another pregnancy occurring before readmission, since those clinic patients most needing the operation are reluctant to leave their home and baby for a remote sterilization operation.

Lewis, at the Nashville General Hospital, has a series of abdominal tubal sterilizations operated upon during the first week post partum. He favors local anesthesia, the Irving method of operation; and although the time element shows little appreciable difference, he prefers to operate within the first twenty-four hours, usually about two hours post partum.

At Chattanooga, as at Nashville, Caesarean section is not done with sterilization as the indication for operation.

I approve post-partum sterilization as performed by Doctor Hewitt and his associates within the first twenty-four hours in selected cases, following written consent of the patient and her husband, and with the approval of the indication for operation by some other attending physician than the operator alone.

With the increasing frequency of post-partum tubal sterilization and the gratifying reports of low morbidity and infrequent maternal complications, we must continue to be on guard against abuse of nonpathologic indications for operation which might increase our maternal mortality figures.

DR. W. T. PRIDE (Memphis): Doctors Hewitt and McCall have presented a very timely paper. For years, when a patient was to be sterilized, at the time of delivery a Caesarean section was performed and the tubes tied. This entailed a major operation attended with great risk of the mother. Now, as the essayists have told you, this same sterilization is accomplished by making a very small abdominal incision at or soon after delivery with little danger and no increased morbidity. The technic is variable, as the essayists told you. Most of us have our pet method. We will have failures with any method. After twenty years I had one failure. It is well that we study the case in question and do the best for each individual case. If the case justifies it, the husband could be sterilized with little disturbance, using local anesthesia, and only one week away from work.

Again, I wish to thank these gentlemen for bringing this report to us.

DR. H. P. HEWITT (closing): Doctor Laws made the statement here that between post-partum sterilization and contraceptive advice and Caesarean section, the woman does not have a chance to have a baby. Whether he is right or wrong, I do not know.

As to the method of these sterilizations, we do like the technic of Madlener because we have had less failures with it, it is simple, and we have little bleeding. With this triple ligation method, we take a tube in three separate places and put a ligature around it, and when you get to the Madlener technic, you have a knot, and that is what we think keeps it from going back and recanalizing.

We think a patient who is past thirty-five is not so apt to have failures as the patients under thirty-five. Most of our failures have been in girls in the early twenties. Personally, I feel safer in having a patient past thirty-five have the operation.

Doctor Pride was talking about his cornual resection failure. I have a patient of whom I delivered three boys. She had both tubes removed, one ovary removed, the other ovary was resected and sutured to the fundus of the uterus, and she had three boys, and the doctor who did that told her she had no more chance of getting pregnant than he had.

As far as the anesthesia is concerned, we do like local because we do not have to give inhalation. However, in my private practice I prefer cyclopropane because then the patient is not awake and does not know much about it. The reason I prefer an hour post partum is that the patient under analgesia is still under analgesia and you do not have to repeat it, and she usually never remembers going to the operating room for her sterilization.

This is what the doctors think about it. I am going to tell you what the patients think about it. I have asked several of my private patients what they think about tubal ligation. I had one patient state that she had always heard that life began at forty, but she said her life began when she had her tubes ligated—she got rid of the pregnancy complex.

I have one patient who said her only complaint against the operation was that it just made things too convenient for her husband. We do have the patient's side of it.

From a medical standpoint, I think it is an ideal operation, and I think it is more satisfactory than any contraceptive advice or device that you can find.

I appreciate the discussion.

DIAGNOSIS AND TREATMENT OF SOME OF THE COMPLICATIONS OF THE SULFONAMIDES*

I. G. DUNCAN, B.S., M.D., F.A.C.S.,† Memphis

For the past five years the preparations of sulfanilamide have been extensively used. In many diseases its effectiveness has been almost miraculous. By its administration, such diseases as pneumonia, gonorrhea, septicemia, kidney infections, etc., are now being treated with confidence and success. In fact, with too much confidence, perhaps, for it is like a two-edged sword—capable of doing both good and harm. So in order that we may not allow our enthusiasm to run away with us, I wish to call your attention to some of the ill effects or complications which sometimes occur during the drug's administration, and also to some of the contraindications to its use.

Contraindications.—In cases of nephritis, or in patients with poor kidney function, from any cause, the sulfonamides are contraindicated. However, if the need for this drug be urgent, small doses (twenty to thirty grains per day) may be tried, watching the patient carefully for any untoward symptoms—dizziness, headache, reduction in the quantity of the urinary output, anuria, etc. Alkalies and liberal doses of vitamin B complex, if given along with the drug, seem to increase the patient's tolerance. Methylene blue, administered either intravenously or by mouth, is reported to be the antidote for the toxemias of sulfanilamide. This drug should not be recommended to patients with serious gall-bladder or liver disease.

(1) A rash is among the most common unfavorable reactions to the sulfonamides. In the beginning it may be mild, but if the drug is not discontinued, it may become very serious. As these eruptions may simulate any eruption from scarlet fever to smallpox, any skin manifestation should be regarded as suspicious, and the drug discontinued until the exact status has been determined.

(2) Elevation of temperature frequently results from the administration of the sulfonamides to allergic individuals. These patients usually become cyanotic and their nails become blue. The temperature gradually goes up, and, if the drug is continued, chills, rigors, and high temperature (105) sometimes occur. Often it is difficult to tell whether the dosage is too large or too small; in doubtful cases, play safe and stop it for a few days. If the temperature is due to the drug, it will either be normal or markedly reduced within twenty-four hours. The administration of methylene blue pills, vitamin B complex, etc., will hasten recovery.

Mr. A. came in with an acute prostatitis; temperature ninety-nine and one-half. A preparation of sulfanilamide (ten grains every four hours) was ordered. After two doses, the temperature had risen to 103. He phoned me, and I advised him to discontinue the medicine, as I thought the temperature was due to the infection. Twenty-four hours later I was called to see him and found him rather cyanotic and short of breath; his pulse rate was rapid, his respiration was twenty-four, and temperature 105. The sulfanilamide was discontinued and methylene blue administered. The following day the patient's temperature, pulse, and respiration were normal; he made an uneventful recovery. I believe that, in this case, a few more doses of sulfanilamide would have proven fatal.

(3) Anemia is another complication for which you must be on your guard. If the patient begins to look pale, or complains of feeling excessively weak, his hemoglobin and red cell count must be checked. If the erythrocytes are below one and one-half million, the drug should be discontinued, and a tonic of iron, liver, etc., administered. If the infection is severe, a transfusion may be given, and the drug continued.

(4) Anuria is one of the most serious of all the complications. It usually occurs after rather large doses of the drug have been administered as during the course of

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pneumonia. In rare cases it is due to an irritation of the renal cells, but more often is caused by the ureters becoming plugged with the sulfanilamide crystals. The signs and symptoms are dull, aching pain over the lumbar and suprapubic regions. Occasionally, the colic is so severe that it will simulate the passing of a kidney stone. These patients tend to go down very rapidly; they become mentally dull, and may even be entirely irrational; hiccoughs not infrequently is a most annoying symptom. If an early diagnosis is not made, and heroic measures instituted, a complete anuria will result.

The diagnosis must be made from the signs, symptoms, and physical findings, viz., lumbar pain, renal colic, more or less tenderness over the kidney region, reduction in the amount of urine, and finding in it crystals, red blood cells, and albumin. The crystals in the ureters which are causing the trouble by plugging them can be demonstrated neither by a K. U. B. nor by an intravenous pyelogram. The latter procedure should never be done, as it is worthless from a diagnostic standpoint; it greatly increases the patient's toxemia and lessens his chances for recovery, which are already too slim. If a diagnosis be made before a complete anuria develops, the drug should be discontinued and free elimination instigated. The patient should also receive alkalies and fluids in abundance, both intravenously and by mouth, with general supportive treatment. If there is no improvement within a few hours, or if a complete anuria has taken place, a cystoscopy should be done at once. A ureteral catheter may be passed up the ureter as far as possible, and warm water injected. The catheter can then be twisted. By this method, frequently the catheter can gradually be made to pass up to the kidney. The other side is then similarly treated, and the catheters left in place for drainage and irrigation.

If it is not possible to get the catheters to pass up to the kidney pelves, or at least on one side, a nephrostomy must be done immediately. Time is an important factor, and if you delay a day or two, to see what is going to happen, you will assuredly lose your patient.

Mrs. B., white, age fifty-two. Came in with a complete anuria. Three days previously she had been given a sulfanilamide preparation for influenza. Twenty-four hours following this, she began to have dull pains in the lumbar region and also frequent and painful urination. Several hours later, she was unable to void, though she still had the desire. Upon entering the hospital, she was catheterized, but only about one-half ounce of thick, bloody urine was obtained; this contained numerous crystals and red blood cells. A cystoscopic examination showed both ureters packed full of crystals. With great difficulty, catheters were passed up to the kidneys. They were left in for drainage and irrigation; after a few irrigations with warm water, urine began to drip from the catheters. Within a few hours she was much improved, and was able to leave the hospital forty-eight hours later. No doubt this case would have terminated fatally if she had not been immediately relieved by an opening of the ureters.

Mr. B., male, white, age seventy. Ten days after a prostatectomy, he developed pneumonia and was put upon one of the sulfanilamides. On the fourth day, though his temperature was normal, he did not feel well. He had a dull, aching pain in the lumbar region and a rather sharp pain in his abdomen over the course of the right ureter. Urinalysis revealed numerous crystals and red blood cells. The drug was discontinued, large doses of alkalies were given, and fluids pushed, but the urinary output became less and less until a complete anuria took place. As the patient had recently had a prostatectomy, a cystoscopy was impossible, so a nephrostomy was done on the left side. At operation the ureter was found packed with crystals from the bladder up to the kidney pelvis. These were cleaned out by means of a ureteral bougie and catheter, and a drain put into the kidney pelvis. Urine began to flow at once, and after twelve hours the patient was much improved. However, no urine passed from the right kidney until after four days. He left the hospital three weeks later and has felt fine ever since. His urine was entirely negative four months afterwards. Undoubtedly, this patient would have passed on had a nephrostomy not been done immediately.

I wish to sound a note of warning to some of our surgeons who make a practice of putting large quantities of the sulfanilamide preparations into infected cases at the time of operation. We have seen a number of patients who have turned an ashy color and were pretty well knocked out for several days. In fact, we feel that we lost one patient after putting only sixty grains in the wound.

Mr. C., age twenty-five, white, male. Operation nephrostomy. As the infection in his kidney was very foul, sixty grains of sulfanilamide were put into the incision, and the wound closed with drainage. A few hours after operation, the patient's face became so badly swollen that his eyes were closed. The next day he had a fine, red rash all over his body, and the urinary output had been reduced to only eight ounces. His pulse was 130, weak and irregular. In spite of everything we did, he grew progressively worse and passed away thirty-six hours after operation.

I also wish to report a case of jaundice which occurred during the administration of one of the sulfanilamides.

John D., colored, male, age forty, came in with a chronic extravasation of urine with multiple abscesses over his perineum and buttocks. These were incised, but became so foul that a suprapubic was done. Seven days afterwards the incision became infected and broke down. After four weeks of treatment he became jaundiced and a week later died, due to a secondary pneumonia. Upon entering the hospital this patient was put on one of the sulfanilamide preparations and continued to receive from thirty to forty grains per day until the appearance of the jaundice. At autopsy a severe hepatitis was found. However, we do not know whether the jaundice was caused by the drug or resulted from the infection.

In conclusion, I wish to emphasize a few points:

(1) While the sulfanilamide preparations are very effective in many diseases, their administration is not without danger.

(2) Patients receiving this drug should be most carefully watched for rashes, anemias, elevation of temperature, reduction in the urinary output, and crystals in the urine. If any of these complications should occur, the drug should be discontinued at once.

(3) Surgeons should not put large quantities of this drug in wounds at the time of operation unless they know whether or not the patient is allergic to sulfanilamide.

(4) If an anuria should occur, a cystoscopy should be done at once for the removal of obstructions in the ureters. If this is unsuccessful or not feasible, a nephrostomy should be performed at the earliest possible moment upon one or both sides. Remember that time is a big factor. The sooner the obstruction is removed, the better the patient will stand the procedure, and the kidney will respond much more rapidly if the obstruction is removed before too much damage has been done. Steps for free elimination should be taken, and the patient should also be given alkalies and fluids such as glucose, fruit juices, water, etc., freely.

(5) Patients seem to tolerate the sulfanilamides better if alkalies and vitamin B are given in conjunction.

(6) The sulfanilamides should not be given for longer than ten days or two weeks without a rest of at least a few days. During this period, we recommend the administration of methylene blue.

DISCUSSION

DR. THOMAS F. FRIST (Nashville): I enjoyed Doctor Duncan's paper a great deal. I did not have the pleasure or the opportunity of reviewing it prior to getting up here so therefore of necessity I will discuss the subject in general rather than specifically.

The whole importance of this subject is that it is a tragedy to jeopardize the greatness of a drug such as the sulfonamide group by using it for everything from dandruff to ingrowing toenails. If all of us would realize that we should not experiment with individual patients and with the possibility of jeopardizing the welfare of the patient and would only use it where definitely indicated, we would, of course, not jeopardize the drug either and would have far less complications.

I had the opportunity of reviewing fifty cases of sulfonamide reaction, and I would like just briefly to outline some of the reactions that occur. Seventy-five per cent of these cases had a fever varying from 100 to 105. The important thing about the fever with sulfonamides, I think, is that it disappears usually or drops well within normal limits within the first twenty-four hours after the sulfonamide has been discontinued and fluids forced. Of course, if it is due to infection, the fever will return. I think that is an important point, because many, many times we wonder whether the person's condition is actually due to the drug or to the disease.

On the patient's chart you will frequently notice that the line of the pulse rate is lower than the line of the temperature, which is usually just the opposite where there is actual infection. In other words, the pulse is definitely out of proportion with the temperature. So it is with the appearance of the patient with the sulfonamide reaction; he does not look as sick as the patient with toxicity due to infection.

Seventy per cent of these patients had a rash, and as to the type of rash, fourteen had an erythematous papular rash and twelve had a definite erythema nodosum; only one had definite purpuric spots. All of these rashes subsided entirely within three days following the discontinuance of the sulfonamide group and the forcing of fluids.

Only six of these patients, about ten per cent, had a definite renal damage. Quite a few had a simple hematuria. Only one had a marked urinary suppression of quite a few days. One had a sulfonamide nephritis with an azotemia and an NPN that went to 127, and even with the withdrawal of the drug and the forcing of fluids the NPN did not become lower than sixty-eight.

Only twenty-five per cent of these cases had a secondary anemia. The lowest was five grams of hemoglobin as a result of the drug. Only three of the cases had a leukopenia, contrary to most opinions that leukopenia occurs. However, one had a definite agranulocytosis and died.

One case had a marked conjunctivitis, two a definite polyarthritis, and one a multiple neuritis or polyneuritis; one had an urticarial rash.

The average blood level of the reaction was 5.2 milligrams, though a great many got a reaction with less than one.

I would like to take issue with just one point that Doctor Duncan made, and that is to discontinue the sulfonamide and give a rest period. This group of cases would indicate that if one has had even a slight reaction and the drug is then discontinued, it is very much like diphtheria antitoxin—they develop a definite sensitivity to it, and when you again start the drug, they are much more apt to have a reaction than if they were continued on it.

One thing is just coming to light, I think, that shows the danger of this drug. Weller, at the University of Michigan, who is the editor of the *American Journal of Pathology*, in the January issue, reported 1,700 autopsies done at that hospital, and of those 255 patients had received sulfonamide within thirty days prior to death, and none of these had had any definite organic heart disease prior to administration of sulfonamides. Fifty per cent of these 255 cases showed a definite myocarditis with a marked eosinophilic perivascular infiltration as a result of the drug. We have just seen one case that received large doses of the drug because of a prostatitis, and he received it over a period of quite a few months, then he developed rash and fever and was switched from one drug to the other. He came into the hospital with marked heart failure. Autopsy was done, and it was definitely shown that he had a definite myocarditis which was apparently produced by the drug.

DR. O. N. BRYAN (Nashville): We must be very cautious in emphasizing the toxic reactions to the sulfonamides for fear that we should make someone hesitate to use the drugs in sufficient amounts and over sufficient time to derive the proper benefits from them. The grave reactions such as aplastic anemia and agranulocytosis will very rarely occur, and when they do, it will be in the cases that have had the drug given over a much longer period than it takes for the average case. It is true we should keep ourselves acquainted with the toxic reactions that may occur from giving the sulfonamides, that we may be better able to treat these toxic reactions. Plummer lists the toxic reactions as follows:

Renal irritation, hematuria, colic, anuria, calculus formation, nitrogen retention, and uremia.

Anemia, simple, acute hemolytic, and aplastic.

Leukopenia, granulocytopenia, agranulocytosis.

Hyperleukocytosis.

Hepatitis, jaundice.

Cyanosis.

Nausea and vomiting, dehydration and acidosis.

Drug rash, purpura, morbilliform, scarlatiniform, erythema, erythema nodosum.

Drug fever.

Conjunctivitis.

Psychosis, depression.

Headache.

Neuritis.

When dealing with a patient that has an impaired renal function, the sulfonamides should be given in smaller dosage and with great caution. It is best to choose the drug that is less likely to give renal irritation. Sulfathiazole is the drug of choice and sulfadiazine the second best. Naturally, if renal irritation develops, the first thought would be to withdraw the drug and force fluids to eliminate the drug as soon as possible, but there are certain grave conditions in which these drugs are the only remedy we have, and it is most desirable to continue the drugs. Then it would be best if possible to reduce the dosage, so as not to alter the concentration too much and force fluids. Some authorities are positive that fewer crystals are found in the urine that is kept alkaline and therefore give a dose of sodium bicarbonate with each dose of the sulfonamides. When the toxic reaction reaches the stage of calculus, anuria, and nitrogen formation, then it will be necessary to have a genitourinary specialist.

Leukopenia and agranulocytosis are more apt to occur in the cases that have had large doses of the sulfonamides over a long period of time. I had one case of subacute bacterial endocarditis that developed a marked leukopenia to the extent of 1,000 cells after the prolonged administration of sulfapyridine over several weeks. By withdrawing the sulfapyridine, giving several transfusions, liver, and iron, her blood picture was soon restored to normal, but she died a few weeks later from the subacute bacterial endocarditis.

Nausea and vomiting are the commonest toxic reaction found from the giving of these drugs. It is less likely to happen from sulfadiazine and sulfathiazole. When nausea and vomiting occur to the extent of interfering with the proper concentration, then the sodium salts should be given intravenously. Many other things are done in attempting to correct the nausea and vomiting, such as having the patient sip Coca-Cola off crushed ice, giving some alkali with each dose of the sulfonamides, skipping a dose of the drug occasionally, and giving nicotinic acid.

The drug rashes will usually occur late enough in the disease so that the sulfonamide may be discontinued, and the rash will usually rapidly disappear.

The same is true of the drug fever. If it is due to the giving of sulfonamides, it will rapidly disappear after discontinuing the drug. The same is true with conjunctivitis, psychoses and depressions, and headache. In a case where neuritis develops, it is very wise to be sure there is no underlying cause other than this drug, and it would be advisable to give thiamin chloride for a few days.

DR. L. E. TREVATHAN (Bruceton): A few days ago I was reading a little pamphlet (I do not now remember the author) that said that frequently we should use an acid instead of an alkali where the sulfonamide was not tolerated. I believe that is a good point and was not brought out in the discussion. If you will remember that, it may do you good.

I was glad to hear Doctor Bryan tell us not to be too careful about the use of sulfanilamide and other such preparations. Many men do not use more of these preparations because of timidity. If you read the literature that the companies send out with the preparations, you will be almost scared to death, but you do not do that too much. We country fellows do not have access to all the tests; in fact, we do not have time to make the tests for the overadministration of these preparations, but there is not much danger. You can see the danger signal, the red light, before there is any harm done, as a rule.

DR. E. R. ZEMP (Knoxville): This is a very timely paper. I think the emphasis should be laid on the fact that in perhaps fifty per cent of the patients in whom these drugs are used no diagnosis has been made. We use it now for everything, and, of course, we get failures as well as successes. It is a well-known fact that there are certain types of infections that these drugs have no effect upon whatsoever, such as influenza, in which you very frequently see it used. In virus diseases this drug has no effect at all.

I think it is helpful if we remember the time at which these various symptoms arise. In the first week you can detect a little nausea, perhaps some vomiting, a rash, and a slight fever. These are minor symptoms and do not require any treatment. In the first week also you get hemolytic anemia. It is a strange fact that hemolytic anemia never occurs before the third day and never after the seventh day, so if we pass through the first week of treatment with this drug, we need not fear hemolytic anemia. The second week we very frequently get jaundice and liver disturbances, or even destruction of the liver substance, so it is in the second week that we look for these serious symptoms. In the third week we have agranulocytosis, which perhaps is the most serious of them all; practically every one of these cases dies.

As to the local use of these drugs, for instance, in a ruptured appendix and things of that kind, if you will read your *American Medical Association Journal* for the last week or the week before, you will see that experiments have been carried out which show that the local application of these drugs to the wound has absolutely no more effect than the absorption of the drug when given by mouth. Of course, applying these drugs locally to soldiers on the battlefield may prevent infection, but if the drug itself is not sterile, it is apt to carry infection into the wound, and there is always the danger of lowering the vitality of the tissue with large doses and thereby producing more harm than good. It is a matter of fact that you get no better effect from the local application of this drug than from the administration of it by mouth. On the battlefield this is impossible, so the local application of the drug is the correct thing to do.

In regard to methylene blue, I understand it is good for only one symptom and that is cyanosis, because it simply changes the sulfhemoglobin back to the real hemoglobin, and as far as the other symptoms go, I do not think it has any effect at all. In cases of short duration, like pneumonia, you need not hesitate at all to use this drug, because we do not give it for any length of time, for forty-eight hours or sometimes seventy-two hours, and if no symptoms of hemolytic anemia arise in that time, you can safely carry on your case.

The blocking of the kidney, of course, is something that we have to watch for always. I do not think the alkalies prevent this at all. It can only be prevented by the administration of large quantities of water, and if we see, as Flippin says, that the patient passes at lease 1,300 cubic centimeters of urine a day, the liability of a block is remote.

I want to decry the custom that is being practiced now, by myself and all the rest of us, of administering these drugs for everything that comes along without making a diagnosis. Such a useful drug will surely fall into disrepute unless we are more careful in our diagnosis and more careful in our administration of it.

DR. J. L. MORGAN (Memphis): This drug, as we all know, is quite a potent drug, and in dealing with a potent drug we have to take into consideration a good many factors. It has been my opinion for some time that this drug is being given in too large doses, especially in the beginning of its administration in most cases. I have seen a good many fatal terminations of cases of anuria, and all of these cases that I have seen certainly started out with unusually large doses of some of the sulfonamides.

In urological practice we have not found large doses necessary, so we give, I believe, much smaller doses than the average practitioner in other lines of work. I have wondered whether or not too large doses have not been given, especially the first two days of the administration of this drug.

These cases of anuria that we have mentioned are not all due to crystallization in the ureter or in the uriniferous tubules, but are due to an overwhelming toxic effect on the kidney cells, so, in such cases, introducing the ureteral catheter into the pelvis of kidney with renal lavage is not going to relieve that.

Most of these patients that I have seen (and I have seen several of them in connection with the urological department at the John Gaston Hospital) have been cases in which an unusually large initial dose was given and then quite large doses for the first twenty-four hours after that. I believe if we would be a little more tolerant with this drug and not feel that we have got to cure the patient in twenty-four hours, we would get better results and fewer fatalities.

In the treatment of whatever urological condition we have, my experience has been that if we do not get improvement in the first four, five, or six days, we can quit the drug. I think that will hold good possibly with other conditions that we treat with the sulfonamides. Certainly that is true of gonorrhea and it is true of pyelitis. We have been using it quite a bit in the treatment of lymphopathia venereum, these great big nonsuppurative buboes that we see, particularly in the Negro race, but you must notice improvement in whatever condition you are treating within the first week if the drug is going to do any good. I believe that further continuance of the sulfonamides for more than two weeks, regardless of what you are treating, is flirting with some fatality that may overtake your patient.

TENNESSEE DOCTORS AND THE MILITARY SERVICE

The following is a list of Tennessee doctors who have applied for a commission in the Army or Navy. They are arranged in four categories as follows: first, those who have been commissioned and are on duty; second, those who have been commissioned and are awaiting orders; third, those who have applied for a commission and are awaiting action by the proper authorities; fourth, those who have applied for a commission and been rejected on physical grounds. The list under each category is arranged according to counties.

The list is not complete according to the date of publication. It is accurate in so far as our information goes as of the date the JOURNAL goes to press.

THE HONOR ROLL OF THE MEDICAL PROFESSION IN TENNESSEE NOW SERVING IN THE ARMED FORCES

County	*Name*	*Address*
Anderson	P. M. Dings	Briceville
Anderson	A. K. Morris	Fork Mountain
Anderson	Geo. M. Kelley	Lake City
Anderson	Horton DuBard	Knoxville
Bedford	H. J. Shull	Shelbyville
Blount	R. H. Haralson	Maryville
Blount	Joseph T. Marshall	Chattanooga
Blount	Lowell E. Vinsant	Maryville
Bradley	Dwight N. Arnold	Cleveland
Bradley	A. L. Ball	Cleveland
Bradley	Claud H. Taylor	Cleveland
Bradley	Madison S. Trewhitt	Cleveland
Campbell	O. H. Coleman*	LaFollette
Campbell	Jos. McCoin	LaFollette
Carter	H. B. Damron	Elizabethton
Carter	E. L. Caudill, Jr.	Elizabethton
Carter	J. B. Warren	Elizabethton
Chester	Hunter M. Steadman	Henderson
Claiborne	E. A. McEver	Pruden
Cocke	Haynes B. Cates	Newport
Cocke	Glenn C. Shults	Newport
Coffee	G. W. Shelton	Manchester
Davidson	Geo. A. Hatcher	Cedar Grove, N. J.
Davidson	David F. Johnson	Madison College
Davidson	James P. Anderson	Nashville
Davidson	John W. Anderson	Nashville
Davidson	Jos. D. Anderson	Nashville
Davidson	Ralph Angelucci	Nashville
Davidson	Robert D. Beech	Nashville
Davidson	F. T. Billings	Nashville
Davidson	James Frazier Binns	Nashville
Davidson	R. W. Blumberg	Nashville
Davidson	H. K. Brask	Nashville
Davidson	Robert N. Buchanan, Jr.	Nashville
Davidson	F. W. Buckner	Nashville
Davidson	John C. Burch	Nashville
Davidson	Roger B. Burrus	Nashville
Davidson	B. F. Byrd, Jr.	Nashville
Davidson	Henry M. Carney	Nashville
Davidson	Geo. K. Carpenter	Nashville
Davidson	Arthur H. Cassady	Nashville
Davidson	Jesse H. Chandler (Col.)	Nashville
Davidson	Sam C. Cowan, Jr.	Nashville
Davidson	R. R. Crutcher	Nashville
Davidson	Marion I. Davis	Nashville
Davidson	Walter L. Diveley	Nashville
Davidson	Thos. A. Donnel	Nashville
Davidson	R. L. Dozier, Jr.	Nashville
Davidson	J. J. Eberhart	Nashville
Davidson	P. C. Elliott	Nashville
Davidson	Frank F. Ellis	Nashville
Davidson	Joe W. Fenn	Nashville
Davidson	Ray O. Fessey	Nashville
Davidson	C. M. Fishbach	Nashville
Davidson	Benjamin P. Folk	Nashville
Davidson	Garth E. Fort	Nashville
Davidson	S. F. Fowler	Nashville
Davidson	John W. Frazier, Jr.	Nashville
Davidson	Thos. F. Frist	Nashville
Davidson	R. K. Galloway	Nashville
Davidson	James C. Gardner	Nashville
Davidson	Hamilton V. Gayden	Nashville
Davidson	L. R. Gayden	Nashville
Davidson	H. L. Gilliand	Nashville
Davidson	J. E. Goldsberry	Nashville
Davidson	David K. Gotwald	Nashville
Davidson	Thos. Grizzard	Nashville
Davidson	Laurence A. Grossman	Nashville
Davidson	Harold B. Henning	Nashville
Davidson	Rafael Hernandez (Col.)	Nashville
Davidson	Irving R. Hillard	Nashville
Davidson	Charles Fowler Hollabaugh	Nashville
Davidson	Geo. B. Hubbard	Nashville
Davidson	Vernon Hutton, Jr.	Nashville
Davidson	D. J. Johns, Jr.	Nashville
Davidson	Geo. S. Johnson	Nashville
Davidson	Harry D. Jones	Nashville
Davidson	Sam Ogle Jones	Nashville
Davidson	J. K. Kaufman	Nashville
Davidson	W. G. Kennon, Jr.	Nashville
Davidson	G. E. Kinzel	Nashville
Davidson	James A. Kirtley, Jr.	Nashville
Davidson	W. J. Lee, Jr.	Nashville
Davidson	Herman Levinson	Nashville
Davidson	R. Carl Light	Nashville
Davidson	Jas. A. Loveless	Nashville
Davidson	J. P. Lowe	Nashville
Davidson	Sol Lowenstein	Nashville
Davidson	Jas. R. McMillan	Nashville
Davidson	Robt. H. Magruder	Nashville
Davidson	James H. Matthews	Nashville
Davidson	Benjamin R. Mayes	Nashville
Davidson	Jas. G. Mead	Nashville
Davidson	Cleo M. Miller	Nashville
Davidson	Hugh H. Mills	Nashville
Davidson	Hugh J. Morgan	Nashville
Davidson	Paul G. Morrissey, Jr.	Nashville
Davidson	Max K. Moulder	Nashville

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*Deceased.

Davidson—John R. Olson	Nashville
Davidson—Fred W. T. Overton	Nashville
Davidson—Wm. T. Palm	Nashville
Davidson—Jos. H. Patterson	Nashville
Davidson—Robt. C. Patterson, Jr.	Nashville
Davidson—George C. Porter (Col.)	Nashville
Davidson—John C. Ransmeier	Nashville
Davidson—E. L. Rippy	Nashville
Davidson—E. M. Robinson	Nashville
Davidson—Louis Rosenfeld	Nashville
Davidson—A. F. Russell	Nashville
Davidson—Jos. H. Sayers, Jr.	Nashville
Davidson—Robert E. Schell	Nashville
Davidson—Jesse F. Scott	Nashville
Davidson—Jos. A. Scott	Nashville
Davidson—Ewing Seligman	Nashville
Davidson—Maurice Seligman	Nashville
Davidson—Henry Carroll Smith	Nashville
Davidson—Joe M. Strayhorn	Nashville
Davidson—Thos. B. Stone	Nashville
Davidson—Wm. A. Sullivan	Nashville
Davidson—A. J. Sutherland, Jr.	Nashville
Davidson—A. B. Thach, Jr.	Nashville
Davidson—W. O. Tirrill, Jr.	Nashville
Davidson—Chas. C. Trabue	Nashville
Davidson—W. A. Van Nortwick	Nashville
Davidson—Paul L. Warner	Nashville
Davidson—Thos. S. Weaver	Nashville
Davidson—B. M. Weinstein	Nashville
Davidson—Arthur L. White	Nashville
Davidson—Joe T. Whitfield	Nashville
Davidson—Claiborne Williams	Nashville
Davidson—Herbert Wilson, Jr.	Nashville
Davidson—W. C. Winton	Nashville
Davidson—Jos. C. Wood	Nashville
Davidson—Thos. E. Wyatt	Nashville
Davidson—Chas. R. Yancey	Nashville
Davidson—Alvin Hawkins	Old Hickory
Davidson—A. S. Koenig	Old Hickory
Dickson—W. M. Jackson	Dickson
Dyer—C. L. Denton	Dyersburg
Franklin—Geo. L. Smith	Decherd
Gibson—Basil T. Bennett, Jr.	Trenton
Gibson—James O. Barker	Trenton
Gibson—Geo. Dodson	Humboldt
Gibson—Roscoe Faulkner	Trenton
Gibson—Henry Jas. Roberts	Trenton
Greene—C. H. Henard	Mosheim
Hamblen—Robert A. Purvis	Morristown
Hamblen—D. R. Roach	Morristown
Hamblen—D. Z. Zimmermann	Morristown
Hamilton—C. H. Barnwell	Chattanooga
Hamilton—Alvin H. Benz	Chattanooga
Hamilton—Franklin B. Bogart	Chattanooga
Hamilton—Julian C. Brooks, Jr.	Chattanooga
Hamilton—S. W. Brown	Chattanooga
Hamilton—E. F. Buchner	Chattanooga
Hamilton—Douglas Chamberlain	Chattanooga
Hamilton—John W. Claiborne, Jr.	Chattanooga
Hamilton—J. R. Fancher	Chattanooga
Hamilton—Richard V. Fletcher	Chattanooga
Hamilton—J. L. Hamilton	Chattanooga
Hamilton—F. F. Harris	Chattanooga
Hamilton—H. D. Hickey	Chattanooga
Hamilton—J. M. Higginbotham	Chattanooga
Hamilton—H. T. Holden	Chattanooga
Hamilton—Howard H. Karr	Chattanooga
Hamilton—J. J. Killeffer	Chattanooga
Hamilton—P. H. Livingston	Chattanooga
Hamilton—T. A. Lowery	Chattanooga
Hamilton—Augustus McCravey	Chattanooga
Hamilton—Richard H. Mellen	Chattanooga
Hamilton—Paul H. Milton	Chattanooga
Hamilton—Fay B. Murphey	Chattanooga
Hamilton—E. T. Newell, Jr.	Chattanooga
Hamilton—Wm. E. North	Chattanooga
Hamilton—Gilbert M. Roberts	Chattanooga
Hamilton—Robt. C. Robertson	Chattanooga
Hamilton—T. G. Ross	Chattanooga
Hamilton—Milton C. Semoff	Chattanooga
Hamilton—Wm. J. Sheridan	Chattanooga
Hamilton—M. J. Smith, Jr.	Chattanooga
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Hamilton—Robert A. Wise	Chattanooga
Hamilton—J. C. Wright	Chattanooga
Hardeman—D. L. Brint	Bolivar
Hardeman—M. J. Stewart	Whiteville
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Hardin—S. L. Stephenson, Jr.	Savannah
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Henry—Geo. H. McSwain	Paris
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Knox—Malcolm F. Cobb	Concord
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Knox—E. E. Carrier	Knoxville
Knox—L. W. Chesney	Knoxville
Knox—H. S. Christian	Knoxville
Knox—Sam M. Cooper	Knoxville
Knox—W. A. DeSautelle	Knoxville
Knox—T. B. Drinnen	Knoxville
Knox—Richard N. Duffey	Knoxville
Knox—J. H. Duggins	Knoxville
Knox—Glenn D. Grubb	Knoxville
Knox—Geo. G. Henson	Knoxville
Knox—Oliver W. Hill, Jr.	Knoxville
Knox—C. R. Huffman	Knoxville
Knox—C. E. Irwin	Knoxville
Knox—Willard J. Irwin	Knoxville
Knox—H. H. Jenkins	Knoxville
Knox—J. O. Kennedy	Knoxville
Knox—A. H. Lancaster	Knoxville
Knox—J. H. Lesher	Knoxville
Knox—J. D. McCullough	Knoxville
Knox—Wm. T. McPeake	Knoxville
Knox—J. L. Montgomery	Knoxville
Knox—E. P. Nicely	Knoxville
Knox—Ralph Nichols	Knoxville
Knox—B. M. Overholt	Knoxville
Knox—Jos. B. Parker, Jr.	Knoxville (Inskip)

Knox—Robt. F. Patterson, Jr.	Knoxville
Knox—Herschel Penn	Knoxville
Knox—Jarrell Penn	Knoxville
Knox—Jos. L. Raulston, Jr.	Knoxville
Knox—P. D. Smith	Knoxville
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Knox—Leon J. Willien	Knoxville
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Lincoln—Ben H. Marshall	Fayetteville
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Loudon—Avery Leeper	Lenoir City
McMinn—S. B. McClary, Jr.	Etowah
McNairy—H. O. Mason	Adamsville
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Madison—H. H. Herron	Bemis
Madison—C. H. Brown	Jackson
Madison—J. E. Douglass	Jackson
Madison—R. S. Hellmann	Jackson
Madison—Carl Rogers	Jackson
Madison—A. R. Taylor	Jackson
Madison—J. R. Thompson, Jr.	Jackson
Madison—P. E. Wylie	Jackson
Madison—Stevens Byars	Mercer
Marshall—A. L. Cooper	Chapel Hill
Marshall—H. B. Disharoon	Lewisburg
Maury—W. N. Cook	Columbia
Maury—Robin Lyles	Columbia
Maury—J. B. Miller	Columbia
Monroe—D. F. Heuer, Jr.	Sweetwater
Monroe—R. M. Price	Sweetwater
Montgomery—J. A. Culbertson	Clarksville
Montgomery—John H. Ledbetter, Jr.	Clarksville
Obion—Hal E. Bennett	Troy
Obion—Edward W. Barksdull	Union City
Obion—R. M. Darnall	Union City
Overton—H. B. Nevans	Livingston
Pickett—Floyd B. Hay	Byrdstown
Polk—J. H. Lillard	Benton
Putnam—H. H. Taylor	Cookeville
Putnam—R. L. Akin	Monterey
Roane—G. D. Schuessler	Oliver Springs
Roane—F. Davis Owings	Rockwood
Rutherford—Harvey W. Carter	Murfreesboro
Sevier—Charles E. Pack, Jr.	Sevierville
Sevier—R. M. Perry	Sevierville
Shelby—R. Roger Anderson	Memphis
Shelby—Chas. G. Andrews	Memphis
Shelby—Edward R. Atkinson	Memphis
Shelby—Chas H. Avent	Memphis
Shelby—James M. Bethea	Memphis
Shelby—J. D. Biles, Jr.	Memphis
Shelby—Samuel Blackwell	Memphis
Shelby—W. B. Blaisdell, Jr.	Memphis
Shelby—W. T. Black, Jr.	Memphis
Shelby—R. E. Bland (Col.)	Memphis
Shelby—Philip B. Bleecker	Memphis
Shelby—Geo. M. Bogardus	Memphis
Shelby—H. O. Bourkard	Memphis
Shelby—James M. Brockman	Memphis
Shelby—W. T. Braun	Memphis
Shelby—Joseph A. Buchignani	Memphis
Shelby—J. G. Burd	Memphis
Shelby—J. Hughes Chandler	Memphis
Shelby—J. M. Chandler	Memphis
Shelby—J. M. Chambers, Jr.	Memphis
Shelby—R. B. Chrisman, Jr.	Memphis
Shelby—Phillip T. Crawford	Memphis
Shelby—J. A. Crisler, Jr.	Memphis
Shelby—J. A. Danciger	Memphis
Shelby—Floyd M. Davis	Memphis
Shelby—Chas. J. Deere	Memphis
Shelby—John M. Dougall	Memphis
Shelby—E. S. Eddins	Memphis
Shelby—C. Barton Etter	Memphis
Shelby—J. D. Evans	Memphis
Shelby—M. L. Evans	Memphis
Shelby—Taylor Farrar	Memphis
Shelby—Turley Farrar	Memphis
Shelby—Harold Feinstein	Memphis
Shelby—Benj. Fendler	Memphis
Shelby—L. F. Ferrell	Memphis
Shelby—B. F. Floyd	Memphis
Shelby—Dale E. Fox	Memphis
Shelby—Jos. A. Gardner, Jr.	Memphis
Shelby—Geo. E. Gish	Memphis
Shelby—Fred A. Goldsberg	Memphis
Shelby—L. I. Goldsmith	Memphis
Shelby—H. B. Gotten	Memphis
Shelby—H. D. Gray	Memphis
Shelby—V. A. Hall	Memphis
Shelby—J. A. Hanna	Memphis
Shelby—Carl M. Harwell, Jr.	Memphis
Shelby—R. D. Henderson	Memphis
Shelby—R. A. Hennessey	Memphis
Shelby—B. S. Henry	Memphis
Shelby—A. L. Herring	Memphis
Shelby—C. H. Householder	Memphis
Shelby—John L. Houston	Memphis
Shelby—Felix A. Hughes	Memphis
Shelby—James G. Hughes	Memphis
Shelby—John D. Hughes	Memphis
Shelby—Chas. W. Ingle	Memphis
Shelby—Alvin Ingraham	Memphis
Shelby—Harry Johnson	Memphis
Shelby—Albert M. Jones	Memphis
Shelby—O. N. Jones	Memphis
Shelby—W. B. Key	Memphis
Shelby—John C. King	Memphis
Shelby—Richard King	Memphis
Shelby—Nathanial W. Kuykendall, Jr.	Memphis
Shelby—Chas. M. Lobrano	Memphis
Shelby—J. H. Lotz	Memphis
Shelby—D. G. Lockwood	Memphis
Shelby—J. P. Long, Jr.	Memphis
Shelby—Donald A. McCannel	Memphis
Shelby—O. S. McCown, Jr.	Memphis
Shelby—Eugene E. McKenzie	Memphis
Shelby—W. F. Mackey	Memphis
Shelby—Wm. Battle Malone, II	Memphis
Shelby—Thomas P. Manigan	Memphis
Shelby—P. M. Markle	Memphis
Shelby—Alfred D. Mason, Jr.	Memphis

Shelby—Wm. P. Maury, Jr.	Memphis
Shelby—R. A. Miller	Memphis
Shelby—R. W. Miller	Memphis
Shelby—J. C. Mobley, Jr.	Memphis
Shelby—Thos. Lane Moore, Jr.	Memphis
Shelby—J. P. Moss	Memphis
Shelby—Henry Moskowitz	Memphis
Shelby—Francis Murphey	Memphis
Shelby—Bedford T. Otey	Memphis
Shelby—Alfred H. Page	Memphis
Shelby—Wm. H. Parker	Memphis
Shelby—Geo. E. Paullus, Jr.	Memphis
Shelby—Ben Pentecost	Memphis
Shelby—J. R. Pepin	Memphis
Shelby—V. D. Pettit	Memphis
Shelby—Raymond W. Polk	Memphis
Shelby—Hugh R. Raines	Memphis
Shelby—L. C. Ramsay	Memphis
Shelby—Chas. G. Robinson	Memphis
Shelby—Wm. A. Runkle	Memphis
Shelby—P. B. Russell, Jr.	Memphis
Shelby—Wm. T. Satterfield	Memphis
Shelby—Schayel Scheinberg	Memphis
Shelby—E. C. Segerson	Memphis
Shelby—J. L. Shaw	Memphis
Shelby—Hugh Smith	Memphis
Shelby—P. A. Statile	Memphis
Shelby—S. D. Sullenberger	Chattanooga
Shelby—R. C. Taylor	Memphis
Shelby—M. J. Tendler	Memphis
Shelby—B. S. Taley	Memphis
Shelby—W. M. Tipton	Memphis
Shelby—A. B. Tripp	Memphis
Shelby—I. F. Tullis, Jr.	Memphis
Shelby—C. F. Varner	Memphis
Shelby—R. A. Wallace	Memphis
Shelby—T. L. Waring	Memphis
Shelby—O. S. Warr, Jr.	Memphis
Shelby—W. W. Watkins	Memphis
Shelby—J. E. Watson, Jr.	Memphis
Shelby—Julian K. Welch, Jr.	Memphis
Shelby—S. I. Wener	Memphis
Shelby—Horace G. Williams	Memphis
Shelby—W. L. Wilhelm	Memphis
Shelby—Harwell Wilson	Memphis
Shelby—John M. Wilson	Memphis
Shelby—J. E. Wilson	Memphis
Sullivan—J. W. Erwin	Blountville
Sullivan—G. W. McCall	Bristol
Sullivan—B. W. Mongle	Bristol
Sullivan—R. W. Asthalter	Kingsport
Sullivan—H. O. Bolling	Kingsport
Sullivan—R. H. Brown	Kingsport
Sullivan—H. S. Burem	Kingsport
Sullivan—P. W. Cox	Kingsport
Sullivan—John B. Hamilton	Kingsport
Sullivan—R. B. Howard	Kingsport
Sullivan—K. R. Kiesau	Kingsport
Sullivan—M. D. Massengill, Jr.	Kingsport
Sullivan—J. F. Morton	Kingsport
Sullivan—R. G. Nichols	Kingsport
Sullivan—Raymond A. Steadman	Kingsport
Sumner—P. M. Huggins	Gallatin
Sumner—Benjamin A. Warren	Gallatin
Tipton—J. S. Ruffin, Jr.	Covington
Tipton—O. J. Swisher	Covington
Unicoi—R. H. Harvey	Erwin
Unicoi—W. C. Humbert	Erwin
Unicoi—H. L. Monroe	Erwin
Union—Norman H. Rucker	Luttrell
Washington—C. M. Creech	Johnson City
Washington—C. S. Gresham	Johnson City
Washington—W. D. Hankins	Johnson City
Washington—Harry Myron, Jr.	Johnson City
Washington—W. L. Poole	Johnson City
Washington—W. G. Preas	Johnson City
Washington—Hugh F. Swingle	Johnson City
Washington—Charles P. Wofford	Johnson City
Washington—H. B. Cupp	Mountain Home
Washington—John Busey	Mountain Home
Washington—Ernest Marcus	Mountain Home
Wayne—Dexter L. Woods	Waynesboro
Weakley—Paul W. Wilson	Dresden
Weakley—Madison H. Buckley	Martin
Wilson—O. R. Hill	Lebanon
Wilson—James McFarland, Jr.	Lebanon
Wilson—W. K. Tilley	Lebanon

DOCTORS WHO HAVE RECEIVED COMMISSIONS AND AWAITING ORDERS TO ACTIVE DUTY

County	*Name*	*Address*
Davidson	Newton A. Cannon	Nashville
Davidson	Nathan P. Horner	Nashville
Dyer	J. Paul Baird	Dyersburg
Gibson	James O. Fields	Milan
Hamilton	Howard M. Ausherman	Chattanooga
Hamilton	Walter Buckner, II	Chattanooga
Hamilton	Harley C. Darnall	Chattanooga
Hamilton	Eugene F. McCall	Chattanooga
Jefferson	William B. Malcolm	Dandridge
Jefferson	Frank L. Miligan	Jefferson City
Knox	R. H. Butler	Knoxville
Knox	Sam P. Davidson	Knoxville
Knox	J. G. Eblen	Knoxville
Knox	James B. Ely	Knoxville
Knox	Peter J. Flippin	Knoxville
Knox	D. T. Hoey	Knoxville
Knox	R. E. Lawson	Knoxville
Knox	R. P. Layman	Knoxville
Knox	L. C. Ogle	Knoxville
Knox	John S. Powers, Jr.	Knoxville
Knox	J. W. Riggs	Knoxville
Knox	John A. Range	Knoxville
Knox	Jacob M. Williams	Knoxville
McNairy	T. N. Humphreys	Selmer
Madison	Roy M. Neudecker	Jackson
Polk	H. H. Hyatt	Ducktown
Shelby	J. M. Aste	Memphis
Shelby	H. E. Atherton	Memphis
Shelby	A. J. Cates	Millington
Shelby	Joseph D. Cleveland	Memphis
Shelby	Jack S. Goltman	Memphis
Shelby	Paul Hill Goodman	Memphis
Shelby	Harry Z. Landis	Memphis
Shelby	Robert E. Lawson	Memphis
Shelby	J. W. McElroy	Memphis
Shelby	Ira F. Porter	Memphis
Shelby	Bryant S. Swindoll	Memphis

DOCTORS WHO HAVE APPLIED AND WHOSE COMMISSIONS ARE PENDING

Anderson—J. L. Sergeant	Lake City
Bradley—Wm. A. Garrott	Cleveland
Campbell—C. E. Ausmus	Jellico
Carter—W. W. Evans	Elizabethton
Davidson—S. W. Ballard	Nashville
Davidson—Theodore W. Davis	Nashville
Davidson—James T. Hayes	Nashville
Davidson—Travis H. Martin	Nashville
Davidson—Theodore Morford	Nashville
Davidson—S. S. Riven	Nashville
Davidson—T. Emerson Simpkins	Nashville
Dyer—Robt. G. Latimer, Jr.	Dyersburg
Hamblen—M. J. Bellaire	Morristown
Hamblen—Chas. S. Crook	Morristown
Hamblen—Y. A. Jackson	Morristown
Knox—B. B. Mitchell	Fountain City
Knox—Jack Chesney	Knoxville
Knox—E. M. Eddington	Knoxville
Knox—Frank A. Faulkner	Knoxville
Knox—Owen D. Moore	Knoxville
Knox—Frank O. Nichols	Knoxville
Knox—H. L. Pope	Knoxville
Knox—Wiley R. Smith	Knoxville
Knox—John Szewczyk	Knoxville
Lincoln—James V. McRady	Fayetteville
Madison—Roderick C. Webb	Bemis
Maury—H. C. Busby	Columbia
Shelby—M. W. Adams	Memphis
Shelby—Justin H. Adler	Memphis
Shelby—Jacob Alperin	Memphis
Shelby—G. B. Bland	Memphis
Shelby—R. F. Bonner	Memphis
Shelby—Carey Bringle	Memphis
Shelby—L. L. Carter	Memphis
Shelby—Richard E. Ching	Memphis
Shelby—Clyde V. Crosswell	Memphis
Shelby—J. E. Holmes	Memphis
Shelby—C. K. Lewis	Memphis
Shelby—J. W. McKinney	Memphis
Shelby—E. D. Mitchell, Jr.	Memphis
Shelby—D. W. Oelker	Memphis
Shelby—Sam L. Raines	Memphis
Shelby—E. A. Stanfield, Jr.	Memphis
Smith—L. R. Sloan	Carthage
Sullivan—W. C. Correras	Bristol
Sullivan—L. B. Snapp, II	Bristol
Tipton—N. L. Hyatt	Covington

DOCTORS WHO APPLIED FOR COMMISSIONS, BUT REJECTED ON PHYSICAL GROUNDS

Anderson—Trent O. Huff	Clinton
Cannon—Carl E. Adams	Woodbury
Anderson—A. J. Butler	Clinton
Carter—John L. Chesnut	Elizabethton
Carter—E. T. Pearson	Elizabethton
Coffee—Wm. M. Minnis	Manchester
Davidson—E. E. Anderson	Donelson
Davidson—R. Z. Linney	Madison
Davidson—Joe E. Sutherland	Madison College
Davidson—J. J. Ashby	Nashville
Davidson—Edward H. Barksdale	Nashville
Davidson—Lynch D. Bennett	Nashville
Davidson—David W. Hailey	Nashville
Davidson—Andrew N. Hollabaugh	Nashville
Davidson—Thos. M. Jordan	Nashville
Davidson—Carl Kirchmaier	Nashville
Davidson—N. B. Morris	Nashville
Davidson—James C. Overall	Nashville
Davidson—James N. Owens	Nashville
Davidson—Don C. Peterson	Nashville
Davidson—Paul E. Purks	Nashville
Davidson—Eugene M. Regen	Nashville
Davidson—D. W. Smith	Nashville
Davidson—Albert Weinstein	Nashville
Davidson—Eston D. White	Nashville
Davidson—W. W. Wilkerson, Jr.	Nashville
Davidson—V. J. Wong	Nashville
Davidson—J. H. Solomon	Old Hickory
Franklin—Jeff C. Moore	Winchester
Gibson—Henry N. Moore	Milan
Greene—Rae B. Gibson	Greeneville
Hamblen—Maxwell D. Raine	Morristown
Hamilton—Justin O. Adams	Chattanooga
Hamilton—William D. Anderson	Chattanooga
Hamilton—William Ross Buttram	Chattanooga
Hamilton—Erwin M. Funderburk	Chattanooga
Hamilton—Orville C. Gass	Chattanooga
Hamilton—Foster Hampton, Jr.	Chattanooga
Hamilton—John W. Hocker	Chattanooga
Hamilton—D. Isbell	Chattanooga
Hamilton—D. B. Karr	Chattanooga
Hamilton—Geo. E. Lacy	Chattanooga
Hamilton—J. G. McMillan	Chattanooga
Hamilton—Tim J. Manson	Chattanooga
Hamilton—Fred E. Marsh	Chattanooga
Hamilton—J. R. Martin	Chattanooga
Hamilton—Chas. T. Read	Chattanooga
Hamilton—E. E. Reisman, Jr.	Chattanooga
Hamilton—Clarence Shaw	Chattanooga
Hamilton—H. J. Starr	Chattanooga
Hamilton—W. E. Van Order	Chattanooga
Hamilton—J. J. Word	Chattanooga
Hamilton—P. H. Dietrich	Ooltewah
Hardeman—Aubrey Richards	Whiteville
Hawkins—John E. Kite, Jr.	Bulls Gap
Henry—Barton McSwain	Paris
Knox—Charles W. Black	Knoxville
Knox—P. H. Cardwell	Knoxville
Knox—William E. Clark	Knoxville
Knox—Roy Fisher	Knoxville
Knox—John R. Hill	Knoxville
Knox—Joel C. Morris	Knoxville
Knox—Bruce R. Powers	Knoxville
Knox—Philip C. Thomas	Knoxville
Knox—V. I. Smith	Knoxville
Knox—Richard G. Waterhouse	Knoxville
Knox—V. M. Williger	Knoxville
Lawrence—V. H. Crowder	Lawrenceburg
Lawrence—W. O. Crowder	Lawrenceburg
Loudon—J. P. Cullum	Lenoir City
Madison—Glenn D. Batten	Jackson
Madison—Leland M. Johnston	Jackson
Madison—John C. Pearce	Jackson
Marshall—J. T. Gordan	Lewisburg

Morgan—Wm. E. Gallion	Oakdale
Sevier—R. A. McCall	Sevierville
Shelby—J. C. Ayres, Jr.	Memphis
Shelby—William A. Barnes	Memphis
Shelby—Harold B. Boyd	Memphis
Shelby—Davis L. Brown	Memphis
Shelby—Peter J. Cavallo	Memphis
Shelby—E. D. Connell	Memphis
Shelby—Jewell M. Dorris	Memphis
Shelby—George C. Furr	Memphis
Shelby—David W. Goltman	Memphis
Shelby—H. Wm. Greenburgh	Memphis
Shelby—A. J. Grobmyer, Jr.	Memphis
Shelby—Robert M. Gross	Memphis
Shelby—Chas. Wm. Harting	Memphis
Shelby—H. J. Jacobson	Memphis
Shelby—Lyman Kasselberg	Memphis
Shelby—Robert A. Knight	Memphis
Shelby—Phil M. Lewis	Memphis
Shelby—Frank O. McGehee	Memphis
Shelby—Leroy H. Mayfield	Memphis
Shelby—C. Wilson Moore	Memphis
Shelby—Swan B. Moss	Memphis
Shelby—Charles M. Oberschmidt	Memphis
Shelby—Chas. B. Olim	Memphis
Shelby—Michael J. Roach, Jr.	Memphis
Shelby—Jesse M. Roy	Memphis
Shelby—Arthur R. Sample	Memphis
Shelby—David E. Scheinberg	Memphis
Shelby—Phillip C. Schreier	Memphis
Shelby—Lawrence Sebulsky	Memphis
Shelby—Chas. C. Smeltzer	Memphis
Shelby—Jos. S. Stabnick	Memphis
Shelby—Edwin M. Stevenson	Memphis
Sullivan—Wm. H. Chappell	Kingsport
Sullivan—W. A. Wiley	Kingsport
Washington—J. R. Bowman	Johnson City
Washington—T. P. McKee	Johnson City
Washington—John F. Moore	Johnson City

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H. H. SHOULDERS, M.D., Editor and Secretary

SEPTEMBER, 1942

EDITORIAL

THE DOCTOR WHO IS COMPELLED TO STAY AT HOME

The editor has received several letters from members protesting their plight. These men have shown their loyalty to their country and to their profession in every way they can do so. They accepted the authority of the Procurement and Assignment Service as the government agency set up to make decisions for them as to where they could serve in the most useful capacity during the period of the emergency. In loyalty to their country they made themselves available for whatever service the Procurement and Assignment Service saw fit to assign to them. This service saw fit to assign them to duties at home. Most of them would prefer to serve in uniform with the colors.

These men, in some instances, have been compelled to endure some unjust criticism. People without the facts are prone to make loose statements with regard to their motives. It is an easy matter to apply the term "slacker" to the case of someone at home when the fact that he is at home seems to offer proof in support of such a statement.

In most of the instances the man is not only not a slacker, but, in fact, is serving in a capacity loyally in spite of the fact that he much prefers to serve elsewhere.

It is seriously to be hoped that a proper insignia will be issued to the men in such positions in order that their friends, their neighbors, their children, and their grandchildren will have that testimony to the fact that they served willingly in the position assigned to them by the agency created to perform such functions.

"ONE-DAY SYPHILIS CURE" ARTICLE IS ASSAILED BY A. M. A. JOURNAL

A man or woman who graduates in medicine and receives a diploma becomes a doctor of medicine. For such a person to become truly and finally initiated into the practice of medicine, it is necessary for him or her to live with doctors, to work with doctors and patients, to have all the contacts connected with the delivery of medical care. A doctor who is so trained develops a sense of caution because of the responsibility which attaches to whatever he does. He adopts new methods and procedures, but he does so cautiously. He observes the injunction: "Be not the first by whom the new is tried, nor yet the last to lay the old aside."

But the doctor who graduates and becomes in that sense a doctor and then takes up literature in connection with the field of fiction or in some other field of literature he becomes less cautious. He does not demand that his facts be checked and doubled checked. He is prone to jump at conclusions and recommend new methods which he personally has never tried because he does not administer them on his own responsibility to the patient.

Dr. Paul de Kruif has written a great deal on quasimedical subjects. He writes as a doctor when, as a matter of fact, he is not always qualified to write with that degree of caution which a real medical authority would employ. An example of this is his article on the "One-Day Treatment of Syphilis," published in the *Reader's Digest*.

Dr. Morris Fishbein, editor of the *Jour-*

nal of the American Medical Association, takes him to task in the following editorial:

"In the *Reader's Digest* for September appears an article by Paul de Kruif entitled 'Found: A One-Day Cure for Syphilis,' heralded by the editors of that periodical as 'the medical sensation of the year.' In this article Mr. de Kruif states that 'now there actually is promise of a one-day cure.' He asserts without, of course, any basis in fact that 'the standard eighteen-month course of treatment is too painful, too dangerous, too prolonged for the mass cure of early syphilis.' After describing certain experiments conducted by Drs. Walter M. Simpson, H. Worley Kendell, and Donald L. Rose in the Miami Valley Hospital, he concludes:

" 'With a one-day cure available, with plenty of doctors and nurses trained in fever therapy, and using equipment which costs little war material, we ought really to begin to wipe out the horror of syphilis. There are a million active cases in the United States. With this powerful new treatment, all persons found infected with active syphilis could be taken out of circulation and their danger to the community quickly abolished. The immediate expansion of this chemothermic treatment should bring hope to those countless hundreds of thousands who are inadequately treated or who are not treated at all. In the meantime, all those now under standard treatment should continue it until the new chemothermic treatment becomes generally available; this for their own as well as for the public safety.'

"As nearly as can be determined, all this effusion is based on a few paragraphs from an article on fever therapy by Drs. Walter M. Simpson, H. Worley Kendell, and Donald Rose, published in the *British Journal of Venereal Diseases* for January-April, 1941, in which the authors state:

" 'The present plan of treatment is as follows: A ten-hour session of fever at 106 Fahrenheit (41.1 C.) has been adopted tentatively as the initial unit of fever, since these limits have proved to be safe and practical in the management of patients with refractory gonococcic infection. Prior to the fever session a single injection of four grains of insoluble bismuth is administered intramuscularly. During the first seven hours of the height of fever, 240 milligrams of mapharsen are administered intravenously by the slow intravenous drip method. No additional antisyphilitic therapy is given.'

"To this they append the following highly conservative opinion:

" 'While no conclusions are permissible since the period of post-therapy observation is as yet less than two years, the prompt resolution of clinical symptoms and the favorable serologic responses would indicate that further diligent inquiry is demanded. The results of this purely experimental undertaking will be made the subject of a later report.'

"In their ultimate 'conclusions' they say:

" 'At the present time such treatment should be considered strictly experimental.

" 'The results achieved thus far should stimulate other investigators to engage in long term, controlled experiments with a view to the introduction of a more rapid, more certain, less dangerous, and less costly method of treatment.'

"In a review of syphilis to appear soon in the *Archives of Internal Medicine*, Drs. Frank W. Reynolds, Charles F. Mohr, and Joseph Earle Moore of Baltimore say:

" 'With his usual uncritical judgment, hyperenthusiasm and willingness prematurely to capitalize journalistically on sober scientific experimentation, de Kruif has unhappily drawn nation-wide attention to this "one-day cure" for syphilis. This tendency of medical journalists to raise false hopes in lay minds can only be deplored. With all due respect to democratic freedom of speech, it is too bad that no censorship exists to compel conservative accuracy from medical sensationalists.'

"This is another instance in which Mr. de Kruif has expanded preliminary medical investigations into announcements to the public that go far beyond anything that the available evidence could warrant. *The Journal* is being deluged with letters from physicians indicating that the article already is doing great harm in creating dissatisfaction among persons with syphilis as to time that may be required to bring about cure. Dr. Walter M. Simpson is an officer in the Bureau of Medicine and Surgery of the United States Navy and has been for some months away from contact with the continental United States. It is unfortunate that in his absence the statements of Mr. Paul de Kruif should have placed him and his research in such an unenviable position before the medical profession."

The treatment may have merit. Time will answer the question. It certainly is not a subject for propaganda by those whose inclination is to write an article for sale to a magazine rather than to write one free of charge for a medical publication.

FEDERAL TAX ON THE UNCOLLECTED ACCOUNTS OF DOCTORS

The following paragraph is contained in a letter from the Bureau of Legal Medicine and Legislation, American Medical Association, Chicago:

"An important change is proposed in connection with the taxation of accounts receivable on the books of a taxpayer at the time of death. Heretofore such accounts have been includable as income for the year of death, even though the taxpayer may have theretofore been on a cash receipts and disbursement basis. The inequity of this situation as it affected particularly the estates of physicians was pointed out in the *Journal* for January 10, 1942, page 149. By so including the uncollected accounts for tax purposes, along with the income actually received, the taxable income for the year of death is artificially built up, subjecting it to higher tax rates, and in many instances imposing a considerable hardship on the estate of the taxpayer to raise the necessary funds to pay the tax. Under the Revenue Act of 1942, such outstanding accounts will not be includable as income for the year of death of the taxpayer, but will be subject to tax as collected, the tax being paid by the person who actually receives the sums collected. Provision is made whereby the estate of taxpayers that have in past years suffered by reason of the unjust operation of the present law may obtain refunds."

JAUNDICE IN THE ARMED FORCES

A great deal has been said in the lay press about jaundice among troops and in such a way as to reflect, to some extent, on the medical department of the United States Army.

The following editorial in the *Journal of the American Medical Association* is appropriate and timely, and is reproduced for the benefit of our readers who may have the question raised to them by the parents of soldiers; also the official statement of the Army is reproduced:

POINTS OUT CHICAGO TRIBUNE'S MISSTATEMENTS ABOUT JAUNDICE

Elsewhere in this issue . . . appears an official statement from the United States Army Medical Department, in the form of a circular letter issued to all medical officers, reporting on the cases of jaundice which occurred among our troops, apparently related to vaccination against yellow fever. This statement, issued promptly by the Army Medical Department, will make clear to those capable of reading it understandingly the problems that are concerned and the manner in which the Army Medical Department is studying them.

Last week the Chicago *Tribune*, apparently having revised its old motto to read "The *Tribune*, right or wrong, but right or wrong, the *Tribune*" persists in its attack on the Army Medical Department in association with this incident. *The Journal* has indicated previously its belief that the attack is unwarranted, that it will tend to undermine military and civilian morale and break down confidence in scientific medicine. Fortunately, the *Tribune* seems to be quite alone in the attack and in the persistence.

In the course of its editorial the *Tribune* makes a number of misstatements of fact which are here corrected. The *Tribune* states:

"It appears in dispatches from Washington that the Navy, using a vaccine prepared according to a different formula, had had no such record of deaths and illness as the Army has disclosed."

This is untrue! The Navy used the same vaccine that was used by the Army, inoculating over 100,000 men and having a considerable number of cases of jaundice, although, of course, not as many as occurred in the Army. The United States Public Health Service used the same vaccine in thousands of cases and also had cases of jaundice. Thus far there have been no reports of deaths from this cause in the Navy. It must be remembered, however, that naval units are much smaller, that they are operating at tremendous distances, and that reports of illness come in more slowly, although deaths are reported immediately.

The *Tribune* states:

"The probability is that the error of judgment was not committed by Major General James C. Magee, the Surgeon General of the Army, for he is said to have been opposed to the wholesale vaccinations against yellow fever. Evidently whoever was to blame is to be protected."

This statement is untrue! Major General James C. Magee did not oppose the vaccinations. Had he done so, they would not have been made. There is no evidence that anybody is to be blamed for anything that should not have been done because there is no evidence that anything was done that was not warranted by the situation.

The *Tribune* persists in its reiteration that it was a mistake to vaccinate our troops against yellow fever—this in the face of the fact that inoculation against yellow fever is now a well-established procedure, yielding immunity and protection against that vicious and fatal disease.

The report of the Army Medical Department also makes clear the difficulties of diagnosis of jaundice and of relating it definitely to the vaccination. The adviser or advisers of the editorial writer for the Chicago *Tribune* seem to be wholly unaware of the details associated with the entire procedure.

In its editorial statement the *Tribune* charges that *The Journal of the American Medical Association* has misled its readers relative to this situation. That charge is untrue. The *Tribune* says:

"When the facts were out and the *Tribune* had called for an impartial inquiry . . . he [the editor of *The Journal*] insisted that the Army was conducting a thorough investigation and that the report would be forthcoming promptly. He [the editor of *The Journal*] was wrong again."

The evidence of the untruth of this statement by the Chicago *Tribune* is apparent in the official report which is published in this issue of *The Journal* and which was sent to all medical officers of the United States Army. The statements of the *Tribune* relative to *The Journal of the American Medical Association*—which, incidentally, it carelessly calls the American Medical Journal—are just as unfounded as most of what the *Tribune* has printed relative to the entire situation.

THE OUTBREAK OF JAUNDICE IN THE ARMY

1. This Circular Letter, No. 95, is issued as a supplement to Circular Letter No. 45, S. G. O., dated May 13, 1942. Subject, "Jaundice." For military reasons this report omits statements of numbers, rates, and specific locations.

2. (a) The occurrence of various types of jaundice among troops in the Army during January and February, 1942, averaged about 125 cases a month. Included among these were a few cases of the type of the disease which is the subject of this report. Taking as a starting point the sudden appearance in widely separated locations of cases which were the first of a series of similar cases, the outbreak of jaundice in the Army may be said to have begun in the week ending March 7, 1942. The peak of the incidence among troops in the continental United States was reached in the week ending June 20, since when there has been a progressive and uninterrupted decline. . . . Advance, but incomplete, information from numerous stations indicates that there has been a further considerable decline in the past two weeks.

(b) As jaundice of undetermined cause was not separately reportable on the statistical reports during March and early

April, it has been necessary to make extrapolations on the basis of samples to allocate portions of known totals to a few respective weeks. These figures, as well as weekly figures, are being reviewed and revised frequently. They are, however, nearly correct, and it is not expected that final figures will make any significant change in the general graph of the outbreak.

(c) Statistics for stations overseas, coming in more slowly, are less complete than those for stations in this country. They indicate that the outbreak began in widely-separated locations abroad at about the same time as the start of the outbreak in this country in the first two weeks in March. The peak of incidence appears to have been reached a week or two later than in this country. The decline is occurring progressively as in the continental United States. The occurrence of cases at overseas locations, however, is particularly related to the arrival of certain troop units at their foreign destinations, and has varied in a manner similar to that of the fluctuating incidence of the disease in certain posts in this country.

3. (a) The clinical course of the disease has been strikingly uniform in the great majority of patients. It has resembled most closely the so-called "catarrhal jaundice" or epidemic hepatitis of unknown etiology. The onset is gradual, often imperceptible, until the appearance of jaundice. Increased susceptibility to fatigue, lassitude, and anorexia are the common prodromal or early symptoms, and in many cases are the only symptoms. Nausea and vomiting may occur and diarrhea may precede other symptoms. Fever is absent or the temperature may be slightly elevated. The leukocyte count is usually normal, occasionally showing a relative increase of monocytes. Pains in the joints and urticaria occur variably, usually in about twenty per cent of cases. Darkly colored urine, yellowing of the skin and sclerae, and lightly colored stools are the rule. The liver is found to be enlarged and tender in about twenty per cent of cases. Bile pigments appear in the urine and blood. The icteric indexes range from fifteen to 200, occasionally to 300. Prothrombin levels are reduced and the results of excretion tests, such as the bromsulphalein test, indicate various degrees of disturbance of hepatic function. Most often, cases have been mild; many discoverable only at special inspections. In a smaller but considerable number the disease has been more severe, showing a variety of stages of hepatic insufficiency. The case fatality rate, based on reported admissions to hospitals, is approximately two-tenths per cent. It would be considerably lower than this if the large number of cases treated in quarters or affected with only the milder and non-incapacitating symptoms were known and available for statistical computation. The above brief outline has of necessity omitted description of many interesting and important clinical varieties of this disease, and has omitted also discussion of therapy. Groups of investigators have been working on all phases of these subjects under the direction of the Surgeon General. The reports of their findings will be published later.

(b) In general recovery has followed in four to eight weeks. As observations progressed a conservative tendency to prolong the convalescent period was widely manifested. In some stations convalescent camps were established to permit continuation of supervision of diet and activities in a regimen by which the patient was returned to duty gradually. Prognosis is favorable. Sufficient evidence is available to warrant the statement that recovery is complete in the vast majority of cases and that permanent liver damage may occur in only a few.

(c) A variety of diagnostic terms has been applied to this disease. These have included "jaundice without known cause," "catarrhal jaundice," "infectious hepatitis," "epidemic hepatitis," "cholangitis," "obstructive jaundice," "yellow jaundice," and, for reasons to be explained later, "post-vaccinal hepatitis." In addition, the questionnaire in use and the blanket diagnosis employed have served as a dragnet for all types of jaundice. Furthermore, at this stage the statistics include records of cases originally diagnosed as "jaundice," but later found to be different. The process of sorting these out and making necessary corrections is in progress. The result will clarify the picture, but will not alter the main characteristics of the outbreak.

4. (a) Pathologic material from all available sources has been assembled at the Army Medical Museum, Washington, D. C., which has in effect established a central registry for specimens from cases of this disease. Comparative studies are being conducted on an extensive scale. It is requested that gross material from fatal cases of hepatitis, together with copies of the clinical abstracts, immunization records and autopsy protocols be sent promptly to the Army Medical Museum. Of special importance is material which may be used in studies to determine the nature and extent of any late effects of the disease. Officers performing post-mortem examinations on persons who have died from accident or disease are requested to state, when possible, in the protocol whether the deceased has suffered from an attack of jaundice, within a period of one year or longer prior to the date of autopsy. This request is made in order to gather further information concerning the repair of liver injury.

(b) The chief pathologic lesions are those of acute or subacute yellow or red atrophy of the liver. The earliest lesions consist of frank necrosis of liver cells in the central parts of the lobules. There are no inclusion bodies present at any stage. The lesions differ distinctly from the lesions of yellow fever.

(1) In the fatal cases of hepatitis observed during the present year, death usually has occurred from two to six weeks after the onset of the disease. The earlier stages of hepatitis have rarely been observed. It is evident that the destructive process and the removal of debris by lysis is rapid. Within ten days the bulk of the necrotic material has usually been removed completely. The stroma is rarely damaged to any extent; in many areas the lobular framework remains intact. In most cases the destructive process is not diffuse; the severity of the damage tends to vary in different parts of the liver. In some areas the hepatic tissue is almost completely destroyed, whereas in other areas only the central parts of the lobules become necrotic. Unlike many forms of destructive liver disease, fatty changes are not a conspicuous feature in hepatitis of the type here discussed. Repair of the injured liver is brought about mainly by multiplication and hypertrophy of remaining liver cells. The resulting lobules tend to be very large, but are often of atypical construction. The part played by "regenerated bile ducts" and the origin of these tubular structures is controversial. Destruction of liver tissue and the removal of debris is in this disease invariably accompanied by inflammatory reaction and, hence, the term "hepatitis" is proper.

(2) Changes in organs other than liver are common. Of particular interest is the marked edema, often accompanied by intense inflammation of the gastrointestinal tract. Although any part of the tract may be involved, including the esophagus, the changes are usually most pronounced in the cecum. The relation of these lesions to the hepatitis is not as yet known. The kidneys may present the picture commonly known as bile nephrosis (cholemic nephrosis). An acute or subacute splenic tumor is usually present. Hemorrhages, often extensive, in serous and mucous membranes are likewise common. The central nervous system often shows changes similar to those found in other severe toxic metabolic disturbances.

(3) To what extent is the liver damaged in the average nonfatal case of hepatitis? To what extent is this damage repaired? These questions are of great interest. It must be emphasized that the extensive damage observed in the rare fatal cases are not duplicated in the nonfatal cases. It is more than probable that "yellow or red atrophy" represents the extreme end of a scale of lesions on which there are many gradations: from the usual slight and readily reparable injury such as occurs in the average patient, to the extensive destruction of tissue in the fatal case. In livers from patients who have died from accident or disease subsequent to an attack of jaun-

dice, little or no evidence of preceding damage has been found. All information available at present indicates that in the average patient hepatic damage is slight, and repair prompt and complete.

5. (a) Etiologic investigations, started in March, have been carried on in many laboratories in the Army and in laboratories of several universities and research institutes at the home stations of members of the Board of Commissions, Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army. Although the outcome of some experimental inoculations made about four months ago seems to offer promise that the jaundice-producing agent may be discovered ultimately, the results to date have been negative as far as the demonstration of a transmissible agent is concerned. These negative results, however, have served to exclude a number of infectious diseases in which jaundice occurs. The outbreak of jaundice in the Army is not Weil's disease or any type of leptospiral infection. It is not a bacterial infection and has no relation to infectious mononucleosis. The disease is not yellow fever nor a modified form of yellow fever. Yellow fever virus has not been recovered from any material (blood, bile, urine, liver, etc.) from jaundice patients.

(b) The search for the icterogenic agent or factors producing this type of jaundice is progressing along two main lines. One of these is an attempt to transmit the disease with materials derived from patients. The other is an attempt to reproduce this type of jaundice in animals with yellow fever vaccine or its compounds. Experiments are being conducted with the whole vaccine using lot numbers known to have been associated with a high incidence of jaundice, and as control lots not associated with jaundice. On the assumption that the component of human serum in certain lots of vaccine administered up to April 18, 1942, may have carried an icterogenic agent, the donor lists are being analyzed and experimental inoculations may be made with the blood of some individuals who contributed pools of serum. Probably it will be impossible directly to attack the question as to whether the chick embryo component carried the icterogenic agent. Immunologic factors involving the operation of an organ-specific (liver) antigen-antibody system are also being investigated.

(c) The serum of patients with jaundice occurring several weeks or longer after vaccination against yellow fever contains antibodies capable of neutralizing yellow fever virus. It is known from tests that jaundice has occurred in persons immune to yellow fever. On the other hand, the serum of a jaundice patient who has not been injected with yellow fever vaccine does not possess these virus-neutralizing properties. These immunologic studies strengthen the conviction that another agent than yellow fever virus is the cause of the jaundice or that another process than the contact of the vaccine virus with cells is the cause of the pathologic changes in the liver.

6. (a) Epidemiologic investigations have been carried out to a greater or less extent at almost every location, in this country and overseas, at which an outbreak of jaundice has occurred. A mass of data in the forms of individual questionnaires and detailed studies of jaundice in troop units and at posts, camps, and hospitals has been assembled at this office. With the exclusion of leptospiral and bacterial causes of jaundice the epidemiologic study has dealt chiefly with the question: Is this outbreak an epidemic of infectious hepatitis (so-called catarrhal jaundice) or is it a noncontagious hepatitis following administration of yellow fever vaccine?

(b) Epidemics of hepatitis and jaundice with clinical and pathologic manifestations similar to the outbreak now ending have occurred among troops in the armies of many nations in the past. During the first year of the Civil War there were 10,929 reported cases with forty deaths among Northern troops. The French have referred to the disease as the "Jaundice of Camps" and the English have often called it the "Jaundice of Campaigns." There were 2,195 cases of epidemic hepatitis in British troops in the Mesopotamian-Dardanelles region from September 5 to November 6,

1915. It is a common enough disease of armies and camps and of groups of young adults in civilian institutions. Recently this office has received reports of the occurrence of jaundice in British and German troops in Africa and in troops of the United Nations in the Middle East and in India. Outbreaks of jaundice in civilian communities in this country and abroad have been well described in the past and are also subjects of recent reports. That jaundice of the usual so-called catarrhal type may have occurred and may be occurring among troops of the United States Army in certain locations is unquestionable. Outbreaks of such cases among troops and civilians are characterized by an incubation period of twenty to thirty-five days or less and a spread by contact. As stated above, the number of cases of jaundice of this type in the Army appears to have been about 125 per month in the first two months of this year. No extensive outbreak of jaundice in the civil population has occurred in this country in the past year.

(c) The incidence of cases of hepatitis and jaundice in the present outbreak in the Army has shown the following special features:

(1) Simultaneous occurrence in troops in locations widely separated, from the Pacific to the Atlantic and from the North to the South, with notable intermediate locations.

(2) Absence of demonstrable contacts between these units.

(3) Invariable association of all large outbreaks and many small outbreaks with administration of certain lots of yellow fever vaccine.

(4) The predictable occurrence of cases of jaundice in groups of individuals, troop units, and others known to have received these lots of vaccine.

(5) The predictable occurrence of a certain percentage of cases of jaundice at stations to which troops known to have received certain lots of vaccine were dispatched.

(6) The occurrence of a certain percentage of cases of hepatitis and jaundice after an incubation period of seventy to ninety days following administration of the abovementioned lots of vaccine. This incubation period has extended from about forty to one hundred twenty days, depending on lot numbers and conditions to which the individual was exposed. A few cases may occur as long as six months after vaccination.

(7) The occurrence of large numbers of cases of jaundice in large groups of individuals vaccinated with one or the other of these lots and the occurrence of a few cases in instances in which subdivisions of the groups received these lots while the more numerous group of "contacts" free from jaundice received other lots of vaccine or were not vaccinated against yellow fever.

(8) The absence, to date, of secondary outbreaks in locations at which this type of jaundice has occurred. This has been true of places in which there were large numbers of cases following yellow fever vaccination and in places in which the patients of postvaccinal jaundice were in the midst of many times their number of nonvaccinated individuals or individuals vaccinated with nonicterogenic lots.

(9) Examples could be multiplied. They are the basis for the conclusion that this outbreak is a type of jaundice following the administration of certain lots of yellow fever vaccine and that the disease is not contagious and hence does not constitute a danger to the public health.

(a) When it appeared likely that the jaundice was associated with vaccination against yellow fever, the Surgeon General, early in the spring, ordered discontinuation of the vaccine then in use until problems were satisfactorily solved and a change to another source of vaccine. Since then the vaccine has been prepared without the human serum component. It is believed the risk of jaundice has been eliminated. The distribution of vaccine was limited to ports of embarkation and the Air Surgeon. Later, vaccination of troops against yellow fever was limited temporarily to military personnel traveling to or through or stationed in areas in which yellow fever is endemic. As defined by the Surgeon General, after consultation with specially informed authorities, these areas are, in the Western

Hemisphere, the mainland of South America lying between latitudes thirteen degrees north and thirty degrees south, including the islands immediately adjacent; in the Eastern Hemisphere, the portion of Africa lying between latitudes sixteen degrees north and twelve degrees south, including the islands immediately adjacent.

(b) Regulations concerning vaccination against yellow fever are matters of international importance. Those in effect for the United States Army are coordinated with British regulations applicable to areas in which yellow fever is endemic or a potential hazard.

NEWS FROM AND ABOUT TENNESSEE DOCTORS IN THE MILITARY SERVICE

Felix A. Hughes, Jr., captain, Memphis, to Station Hospital, Camp Rucker, Alabama.

C. Harold Avent, captain, Memphis, to Third Auxiliary Surgical Group, Fort Sam Houston, San Antonio, Texas.

H. B. Nevans, Livingston, to Camp Butler, North Carolina.

Maurice Seligman, captain, Nashville, to 2325 Northwest Twenty-Seventh Street, Oklahoma City, Oklahoma.

Paul W. Cox, captain, Kingsport, to Station Hospital, Camp Shelby, Mississippi.

C. Barton Etter, Memphis, to Fort Meade, Maryland.

Thomas B. Drinnen, lieutenant, Knoxville, to 48th General Hospital, Camp Rucker, Alabama.

James F. Morton, first lieutenant, Kingsport, to Company D, 313 Medical Battalion, 88th Infantry Division, Camp Gruber, Muskogee, Oklahoma.

Paul R. Swanson, first lieutenant, Chattanooga, to 4116 Montana, El Paso, Texas.

Irving R. Hillard, first lieutenant, Nashville, to 10-C Oleander Apartments, Wilmington, North Carolina.

D. N. Arnold, captain, Cleveland, to Box 130, Station Hospital, Fort Jackson, South Carolina.

W. Val Sanford, major, Ripley, to Stark General Hospital, Charleston, South Carolina.

A. L. Herring, Memphis, to Barksdale Field, Shreveport, Louisiana.

Charles G. Andrews, lieutenant commander, U. S. N. R., Memphis, to U. S. Naval Hospital, Pensacola, Florida.

Jarrell Penn, Knoxville, to U. S. Naval Hospital, Pensacola, Florida.

George K. Carpenter, major, Nashville, to Medical Training School, Washington.

C. E. Irwin, Knoxville, to Camp Rucker, Alabama.

W. W. Watkins, first lieutenant, Memphis, to Station Hospital, Midland, Texas.

Paul W. Wilson, captain, Dresden, to Colorado Springs, Colorado.

W. O. Tirrill, Jr., Nashville, to Charleston, South Carolina.

Elkin L. Rippy, major, Nashville, to 209 Center Drive, Maxwell Field, Alabama.

P. M. Dings, captain, Camp Tyson, Paris, to 2308 Clewis Court Apartment, Tampa, Florida.

John J. Killeffer, captain, Station Hospital, Camp Blanding, Florida, to 101st Medical Regiment, A. P. O. 502, care Postmaster, San Francisco, California.

H. P. Hewitt, Chattanooga, is now back home.

John C. Burch, lieutenant colonel, Nashville, to Fort Sam Houston, San Antonio, Texas.

L. R. Gayden, captain, Nashville, to Maxwell Field, Montgomery, Alabama.

A. B. Thach, Jr., lieutenant, junior grade, Nashville, to Naval Base Hospital, Jacksonville, Florida.

Joe T. Whitfield, first lieutenant, Nashville, to Air Corps, Spence Field, Georgia.

Sam C. Cowan, Jr., captain, Nashville, to Lowry Field, Denver, Colorado.

Alvin Brush Tripp, Memphis, to 906½ South Dakota, Tampa, Florida.

DEATHS

DR. J. P. GILBERT

Dr. J. P. Gilbert, Nashville; Vanderbilt University School of Medicine, Nashville, 1923; aged forty-eight; died September 3, 1942.

DR. E. R. TIMMONS

Dr. E. R. Timmons, Grand Junction; Birmingham Medical College, Birmingham, 1915; aged fifty; died May 24, 1942.

DR. W. T. ROBISON

Dr. W. T. Robison, Murfreesboro; Rush Medical College, University of Chicago, 1915; aged fifty-four; died June 9, 1942.

RESOLUTIONS

DR. E. R. TIMMONS

On May 24, 1942, the profession of Fayette and Hardeman Counties, and the surrounding territory, was shocked by the death of Dr. E. R. Timmons of Grand Junction, Tennessee. Doctor Timmons was born in Alabama and graduated from the Birmingham Medical College. He had practiced medicine in Grand Junction for many years. He was a quiet, unassuming man, and enjoyed a large practice. He always had a deep interest in his patients, and a great interest in his medical society, always being willing to help in any way that he could.

Whereas, the Fayette-Hardeman County Medical Society is grieved and deplores the passing of this good man and associate member.

Now, therefore, we, the Fayette-Hardeman County Medical Society, do hereby express on behalf of the said society its sense of personal and public loss in the death of Doctor Timmons, and do hereby respectfully request that these resolutions be spread upon the records of the Fayette-Hardeman County Medical Society, that a copy be mailed to the family of the deceased as an expression of our sympathy with them in this time of sorrow, and that a copy be sent to the TENNESSEE STATE MEDICAL JOURNAL and to the county papers.

Respectfully,
DR. GEO. F. BRINKLEY,
DR. GEO. W. JACKSON,
DR. W. D. MARTIN,
Committee of Fayette-Hardeman County Medical Society.

DR. J. CLYDE OVERALL

On August 9, 1942, the medical profession of Rutherford County and the surrounding territory was shocked by the sudden death of Dr. J. Clyde Overall at his home in Murfreesboro, Tennessee.

We, the committee of the Rutherford County and Stones River Academy of Medicine, do hereby express on behalf of the society its sense of personal and public loss in the passing of Doctor Overall and do hereby tender the following resolutions:

Be It Resolved, That the Rutherford County and Stones River Academy of Medicine is grieved and deplores the loss of this good man and associate member.

Be It Further Resolved, That we extend to his bereaved widow our sincere sympathy and condolence, and that a copy of these resolutions be spread on the minutes of our society, a copy be sent to the family, the TENNESSEE STATE MEDICAL JOURNAL, and the county paper.

Respectfully submitted,
JOHN CASON, M.D.
LOIS M. KENNEDY, M.D.
A. J. JAMISON, M.D.

DR. W. T. ROBISON

On June 9, 1942, the Rutherford County and Stones River Academy of Medicine lost one of its most beloved and distinguished members in the death of Dr. William Thomas Robison.

Submitting with grieved hearts to the ways of providence in the passing of a faithful and honored member, the undersigned, acting officially for the Rutherford County and Stones River Academy of Medicine, tender these resolutions:

Now, whereas, we bow submissively to the divine hand of him who has taken our member from a life of sacrifice to a life of eternal rest and peace.

Whereas, the Rutherford County and Stones River Academy of Medicine is grieved, and deplores the passing of this distinguished member.

Therefore, we, the committee of the Rutherford County and Stones River Academy of Medicine, do hereby express on behalf of the society its sense of personal loss in the death of Doctor Robison and do hereby respectfully request that these resolutions be spread upon the records of said society; that a copy be sent the American College of Surgeons and a copy be sent to the Tennessee State Medical Association.

(Signed) JOHN CASON, M.D.
LOIS M. KENNEDY, M.D.
A. J. JAMISON, M.D.

NEWS NOTES AND COMMENTS

THE MEDICAL OFFICERS' RECRUITING BOARD

The Medical Officers' Recruiting Board for Tennessee has been ordered to close the office as of September 15.

The Board, as it has functioned in Tennessee, was composed of Colonel R. C. Risburg, a field artillery officer, as chairman and summary court officer; Captain and later Major R. B. Chrisman, Jr., medical officer, and Master Sergeant E. W. Daniels, clerk-stenographer.

This board has served efficiently and in a manner satisfactory to the medical profession. The results of their efforts speak for themselves. The men who have served on this board, in our opinion, will perform faithfully and well any duties assigned them in the period of this emergency. It is with the best of wishes we bid them goodbye.

The fact that the office of the board has closed means that a great convenience is removed from our midst. Doctors who wish to apply for a commission now must apply direct to the Surgeon General of the United States Army, Washington, D. C. Application forms will be available at the regular military hospitals, such as the Station Hospital at Camp Forrest, Fort Oglethorpe, etc.

Dr. Robert E. Sullivan, Nashville, has announced that after September 1 his practice is limited to ophthalmology.

CHANGE OF ADDRESS

Guy H. Williams, Nashville, to 468 Elm Avenue, Norman, Oklahoma.

D. C. McCool, Canton, Mississippi, to 1578 North Parkway, Memphis.

THE 1942 AMERICAN MEDICAL ASSOCIATION MEETING

Even though there is gasoline rationing along the Atlantic Coast and it is becoming more difficult each week to procure railroad reservations going East, the American Medical Association meeting held at Atlantic City, June 8-12, was well attended and there was genuine interest on the part of all who were present. The total registration of physicians for the meeting was slightly more than 8,000, which was most gratifying.

The outstanding feature of the 1942 session was the attendance of visitors from Latin America. There were 140 physicians who registered from other American nations. Many of these participated in the programs of the various sections and in the general scientific meetings.

This was indeed a war meeting and one was reminded constantly that our nation is at war. The programs were featuring subjects pertaining to modern warfare and casualties, while the business meetings were to a considerable extent pertaining to war medicine in its various phases.

The address of the Speaker of the House, Doctor Shoulders, dealt with the American way of life and reviewed the acts and resolutions since the year of 1938.

The new president, Dr. Fred W. Rankin, of Lexington, Kentucky, discussed the wartime responsibilities of medicine as trustee of the nation's health. In spite of the growing strain which will be placed on medical resources of this country, as an estimated 25,000 physicians enter military service by the end of 1942, the profession's obligations are to furnish adequate medical care to the armed force, while at the same time maintaining a faithful service to the civilian population and productive war industries. It further demands that public health programs be cheerfully guarded, maintained, or even increased as the need grows larger and larger. To this end, he said, education, special training, and research must be continued at the present high level of efficiency.

The impact of war was brought still closer to home for American doctors by Paul V. McNutt, chairman of the War Man Power Commission, who warned that if there is not an immediate and significant increase in the number of doctors volunteering for military service, the government will adopt some other method of procurement soon. One of the addresses made by Mr. McNutt was published in the June 20 *Journal of the American Medical Association* and it should be carefully read by every physician in our country.

As has been the case at previous meetings in recent years, the vast scientific exhibit was a most popular part of the meeting and thousands of physicians were constantly looking over these exhibits—quite a few pertaining to medicine and the war. The usual fracture demonstrations once more were highly popular and the opinion was frequently expressed by many that fracture care should be more definitely standardized and simplified in connection with war work. The recently improved colored motion pictures added materially to the interest in this form of medical education.

For the first time this meeting featured special programs for the general practitioner and these sessions proved to be greatly appreciated and well attended. Once more the meetings of the House of Delegates were conducted with a minimum waste of time, with many highly important matters being presented for discussion and subsequent action. The conferences or hearings held by the reference committees were well attended and several of these committees were in session most of the time in order to give everyone a chance to express their individual opinions and better enable the committee to make the desired type of report back to the House. Among important acts was approval of activities of National Physicians Committee for extension of medical service, another not to increase the number of members of Board of Trustees.

At the closing meeting of the House on Thursday afternoon, James E. Paullin of Atlanta was elected as president-elect. William J. Carrington, Atlantic City, was elected vice-president, Olin West re-elected as secretary and general manager, and Herman L. Kretschmer of Chicago as treasurer to succeed himself. H. H. Shoulders of Nashville and Roy G. Fonts, Omaha, were re-elected as speaker and vice-speaker, respectively, of the House of Delegates for another year.

New York was selected as the meeting place for 1945, San Francisco and St. Louis having been chosen previously for the 1943 and 1944 sessions.

Whereas, Dr. Robert P. McCombs of Philadelphia has just completed a series of ten lectures on "Internal Medicine," sponsored by the Tennessee Medical Association before the doctors of Cumberland County.

Therefore Be It Resolved, That we, the Cumberland County Medical Association, hereby express our deep appreciation of the unusually fine course of lectures given by Doctor McCombs of the clear presentation of the salient features in the tremendous field he has covered, of his admirable sense of discrimination in selecting the best information and most important features from that which is available, and of his practical help in the diagnosis and treatment of a number of difficult cases which have been used by Doctor McCombs as illustrative material.

Be It Further Resolved, That we hereby express our hearty thanks to the Tennessee State Medical Association and the Commonwealth Foundation who have jointly made this splendid lecture course possible.

Be It Further Resolved, That a copy of these resolutions be sent to Doctor McCombs and another copy to the Tennessee State Medical Association.

Respectfully submitted,
J. PEERY SLOAN, M.D.,
W. S. DOOLEY, M.D.,
ASA Z. HALL, M.D.,
Committee.

MEDICAL SOCIETIES

Hamilton County:

The meeting of the society was held in the home of Dr. C. R. Thomas on August

13. The guest speakers were Drs. B. F. Peterson and Frank E. Jones of the Eastern State Hospital, Knoxville.

ABSTRACTS OF CURRENT LITERATURE

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Treatment of Trachoma with Neoprontosil. J. W. Cheney. American Journal of Ophthalmology, June, 1942.

The author holds that local instillations of a five per cent solution of neoprontosil should be used in every case of trachoma, and alone will effect a cure in the majority of grade-three cases. It is also valuable as an adjunct to the internal use of the sulfonamide drugs.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

The Kenny Treatment of Anterior Poliomyelitis. John F. Pohl, M.D., Minneapolis. The Journal of the American Medical Association, 118: 1428-1433 (April 25), 1942.

The Kenny method of treatment of acute anterior poliomyelitis was originated by Miss Kenny, a graduate nurse, of Australia. It is not claimed to be a cure for the disease, and it is not contended that it will prevent residual paralysis. It is a method of management of certain findings in the acute phase of the disease which had not been recognized previous to Kenny's work.

These fundamental characteristics of the disease in the acute phase are muscle spasm, mental alienation of muscle and incoordination of muscle function. It is the concept of Miss Kenny that the disease attacks not only the nervous system, but the muscle also, producing inflammation in the muscle. This produces spasm and in the early phase of the disease pain. Paralysis may or may not be present, depending on the location and extent of the lesion in the nervous system.

Spasm produces shortening of the muscle and contractures which become permanent deformities if not relieved. Since spasm of the muscle is the earliest, the most common and the most damaging finding affecting the muscle in acute anterior poliomyelitis, immediate treatment for its relief is imperative if serious and permanent damage to the muscle is to be avoided. This relief is accomplished by applying to the affected muscle over its entirety wool flannel packs wet in boiling water and wrung dry by passing them twice through a tight wringer. The moist pack is covered with oiled silk and then dry flannel. Packs are continued through twelve hours of the day, changed every two hours, and may be renewed every fifteen minutes if the spasm is severe. Joints are left uncovered. The early relief from pain is dramatic. The acute spasm will subside usually within a week if treatment is proper, but shortening may persist for weeks or months if treatment is delayed. Hot packs must be continued until the muscle is able to extend itself completely as evidenced by full range of motion of the joint concerned.

When relief of spasm is accomplished, restoration of function is started. The muscle that is not functioning is not paralyzed, it is claimed, but does not function because it has become alienated from the voluntary center regulating motion. Restoration of function is accomplished by passive motion of the joint moved by the affected muscle by daily moving the joint in a small arc, care being taken not to stretch or stimulate the opposing muscle which is in spasm. When the spasm of the opposing muscle has been relieved, the patient is taught by will to move the nonfunctioning muscle and then to attempt voluntary motion under careful guidance, after normal rhythmic action of muscles is imprinted on the motor center. Haphazard motion of the joint by the patient results in substitution of motion by adjacent unaffected muscles and incoordination. The patient must be kept in bed, turned and cared for by an attendant until muscle coordination is achieved. No splints of any kind are used, since it is contended that they aggravate irritable muscle, increase spasm, and encourage the development of contractures.

The author observed twenty-six cases of acute anterior poliomyelitis treated in the summer and fall of 1940 by or under the supervision of Miss Kenny at the Minneapolis General Hospital and has followed them to date. He feels that the results in these cases are far superior to the results previously obtained by any other method of treatment. These patients show residual paralysis, but the advantages of the method include early relief from pain, muscles left soft and flexible with good circulation, no deformities, effortless movement of joints with smooth coordinated muscle function, and reduced crippling effects. He feels that the Kenny method offers the patient the maximum assurance of recovery and restoration of function of the motor system, and thinks it should be adopted immediately upon establishing the diagnosis.

The results obtained in the twenty-six cases are tabulated.

ROENTGENOLOGY

By J. Marsh Frere, M.D.
Newell and Newell Sanitarium, Chattanooga

A Survey of Hodgkin's Disease and Lymphosarcoma in Bone. J. O. Vieta, M.D.; H. L. Friedell, M.D.; and L. F. Craver, M.D. Radiology, Vol. 39, No. 1, p. 1, July, 1942.

Since Ziegler's original description in 1911 of involvement of the osseous system in Hodgkin's disease, numerous reports have accumulated on skeletal changes in the lymphomotoid diseases. The literature, which has been summarized by Nehlmġir, Craver and Copeland, and Dresser and Spencer, indicates that the osseous lesions in the lymphomas are of considerable clinical importance and therefore merit careful attention.

The following summary and conclusion give a complete résumé of the data presented in the study.

Bone involvement by Hodgkin's disease and lymphosarcoma is not uncommon and represents an important complication of these two diseases. The lesions are most frequently in the pelvis, vertebrae, ribs, and femora, and in most cases involve more than one bone.

Localized pain and tenderness were the most frequent clinical indications of bone lesions, but tumors about the bone margins and neurological changes due to extension into the spinal canal from vertebral lesions were also observed. Elevated serum phosphatase appears to be a promising index of bone extension from both lymphosarcoma and Hodgkin's disease. The serum phosphatase was most commonly elevated in lesions with evidence of osteoplastic change.

On roentgenographic studies lesions were demonstrated in 14.8 per cent of 257 patients with Hodgkin's disease and seven per cent of 213 cases of lymphosarcoma. Because of certain inadequacies of examination (insufficient X-ray studies and difficulty in demonstrating lesions which have not progressed to cortical destruction), these figures do not reflect the true incidence, probably being too low. The lesions were predominantly of the mixed type in Hodgkin's disease, fifty-seven per cent showing a combination of osteoplastic and osteolytic changes. In lymphosarcoma, however, eighty-five per cent were entirely osteolytic. The lesions in Hodgkin's disease were more numerous, involving a greater number of bones, but the lesions of lymphosarcoma were more invasive and more widely scattered over the skeleton. The character of the bone lesions, together with features of the clinical course, is distinctive in each of these diseases, yet may not be considered sufficiently clear-cut for sharp differentiation.

In Hodgkin's disease the age distribution of patients with bone lesions differed in no important respects from that of the general group. In lymphosarcoma, however, the average age of patients with destructive lesions of bone was considered below that of the general group. In lymphosarcoma no difference in survival rates was observed between patients with and those without bone lesions, whereas in Hodgkin's disease, those who were found to have bone changes appeared to have a longer average survival. The difference is most pronounced during the first several years.

Bone lesions in Hodgkin's disease and lymphosarcoma occurred at any point during the course of the disease. In lymphosarcoma bone lesions were found to develop in sixty-three per cent of the patients in the final one-third of the disease span. In contradistinction to this, in only thirty-one per cent of the patients with Hodgkin's disease did bone lesions appear during this portion of the course. This is of prognostic significance and would indicate that development of bone lesions in lymphosarcoma is often a terminal event.

Radiation therapy offers definite amelioration of symptoms in the osseous lesions of Hodgkin's disease and, in some cases, completely restores the invaded bone to its normal structure. The doses given were moderate, administered primarily for relief of symptoms rather than for restoration of bone. Similar clinical improvement occurred in lymphosarcoma after radiation therapy, but no opportunity to follow the bone changes was available because of the short average survival after skeletal invasion.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

The Effect of Diethylstilbestrol and Diethylstilbestrol Dipropionate on Carcinoma of the Prostate Gland—Clinical Observations. Kahle, Ogden, and Getzoff. Journal of Urology, July, 1942.

In 1940 Kahle reported fourteen cases of prostatic hyperplasia treated with diethylstilbestrol, seven of whom also had various types of drainage. In all of the cases there was complete relief of symptoms and of residual urine, or a marked improvement. It was later discovered that one of the patients under estrogenic therapy had adenocarcinoma of the prostate. This patient also showed regression in the size of the prostate with relief of symptoms. This encouraged further observation in the treatment of prostatic malignancies with the extrogenic hormones.

Seven such cases are reported in this article. The ages ranged from sixty-four to seventy-six. Two were colored and five were white.

The diagnosis of prostatic carcinoma was confirmed by biopsy in six cases and was made by rectal palpation in one and confirmed by metastases.

Six of the patients were treated with diethylstilbestrol and one with diethylstilbestrol dipropionate, both preparations by intermuscular injection.

Biopsies during and after treatments with both preparations demonstrated regressive changes in the neoplastic cells, the changes consisting fundamentally of nuclear pyknosis and cystoplasmic vacuolization.

The dosage varied from one to five milligrams, usually beginning with the larger dose about three times weekly, decreasing the dosage when improvement occurred.

In all seven cases reported, clinical improvement was noted as evident by gain in weight, general feeling of well-being, improvement in color, and improvement of urinary symptoms and relief of pain. The only untoward result was gynecomastia in one case.

BOOK REVIEW

Ambassadors in White: The Story of American Tropical Medicine. Charles Morrow Wilson. Publishers: Henry Holt and Company, Inc., New York City. Price, $3.50.

The dramatic story, Ambassadors in White, portrays in a clear and convincing way the problems of tropical diseases in the South American republics. The frontispiece, a painting of the "Conquerors of Yellow Fever," by Dean Cornwell, is symbolic of this great underlying purpose of the book. This book gives an impelling account of public health

It is estimated that 50,000,000 people are sick. Scores of these individuals are suffering from serious diseases—tuberculosis, malaria, typhoid, gastroenteritis, infantile paralysis, heart disease, nephritis, and so forth. Significant data are given, showing the comparative results of disease control in the United States as compared with the Latin-American republics. In the United States in 1939, some 47.2 persons died from tuberculosis per 1,000,000 population. In only one South American republic is the tuberculosis rate lower than in the United States. The author pointed out that the real sufferers have the following death rates per 100,000 population: Panama, 210; Venezuela with 243; Brazil with 250; and Chili with 276. Almost three persons out of every thousand in Chili die each year from tuberculosis.

Diseases such as typhoid, dysentery, and other water-born diseases are referred to as actual menaces in these countries. Malaria is mentioned as a great scourge. Trachoma, an insidious disease of the eyes, too frequently results in blindness. Diseases such as smallpox and measles are twice as high in proportion to population as in North America.

Yellow fever is another major public health enemy. This disease has not occurred in the United States since 1905. It is still prevalent in South America, particularly in Brazil.

Typhoid fever is likewise indigenous and too conditions among 120,000,000 people in Latin America from the Rio Grande to Cape Horn.
prevalent in certain areas. The author emphasizes malnutrition as an underlying cause of high incidence from disease. Such nutritional deficiencies as beriberi and pellagra constitute a real menace.

These data serve to stress the significance of tropical diseases in South American republics, particularly with reference to economic and social advancement. In chapter two emphasis is placed upon the contributions which have been made by these republics to culture, science, and the advancement of medicine. Reference is made to the fact that the University of Mexico inaugurated in 1553 the chair of medicine and other schools of medicine began to appear during this early period. Ambassadors in White is of historical interest to those who may be interested in tropical medicine as well as of scientific importance.

The author indicates that German business houses have made a point of studying and contributing to the study of Latin-American diseases, but the point is made that this was not for philanthropic reasons in many instances. It appears that for half a century German firms have been the leading peddlers of medicine to the business of South America. They have sold proprietary medicine, quack medicine, nostrums, and bogus cures from housemaid's knee to heart disease. Thus, Germany played the strategic part of capturing the Latin-American market for legitimate medicinal purposes. This interest has continued through the years 1939, 1940, and 1941. The Nazis have been employing this method of approach to provide a source of revenue for propaganda and fifth-column activities. One large transport plane can carry more than $250,000 worth of drugs. These things have been done, but the author points out that so far as is essentially known commercial airlines of Axis powers do not now visit Latin America.

In chapters four, five, six, seven, and eight an interesting biographical discussion is given concerning the monumental contributions to tropical medicine by Finlay of Cuba, Reed of Virginia, Gorgas of Alabama, Deeks of Canada, and Noguchi of Japan. Thus a biographical approach is made in presenting significant scientific contributions in the advancement of tropical medicine and, broadly speaking, public health. Very properly Carlos Finlay is recognized as having enunciated the mosquito theory in the transmission of yellow fever. The concept which he advanced afforded a guiding light for the scientific experiments which were later carried on so successfully by Walter Reed in Havana, who proved how yellow fever is spread. The facts concerning this classic experiment are recounted. It is made clear that the control of yellow fever actually began with a demonstration by Gorgas in the application of the principles developed by Reed and his associates about 1900.

The relation of the work of Gorgas to the digging of the Panama Canal is clearly presented and shows that the control of malaria and yellow fever were basic in that great undertaking. In a formal report to the Surgeon General of the United States Army, Gorgas stated:

"I do not believe that posterity will consider the commercial and physical success of the canal the greatest good it has conferred upon mankind. I hope that as time passes our descendants will see that the greatest good the canal has brought has been the opportunity it gave for demonstration that the white man can live and work in the tropics, and maintain his health at as high a point as he can, doing the same work, in the temperate zone. That this has been demonstrated none can gainsay."

Reference is made to Gorgas as the greatest sanitarian among our ambassadors in white, and while he was gaining world renown by advancing tropical sanitation, one of his less known colleagues, Dr. William Edgar Deeks, was likewise blazing a pioneer trail, first as physician in charge of the Ancon Hospital and later director of the medical service of the United Fruit Company. The scientific contributions of Doctor Deeks in the control of malaria, typhoid, dysentery, and in fact in the establishment of what is termed banana medicine were of the first magnitude.

Chapter eight is devoted to the scientific work of Noguchi, who was at the time a member of the Rockefeller Research Institute. His research activities were varied and in general constructive. As a result of his research on yellow fever he succumbed to "black vomit." The following quotation is given indicative of Noguchi's contribution:

"He (Noguchi) began his career with venoms, the venoms took him to serology, serology to syphilis, syphilis to the spirochetes, the spirochetes to these strange and little studied diseases of tropical medicine; diseases where science has made least inroad, where treatment is still in the hands of miracle workers, horrible diseases, fatal like the diseases of the north a century ago; causes unknown, carriers unknown, the human being never certain from where the malevolence will strike, but romantic in the study of them."

A chapter on microbe tourists is of much interest in which reference is made to the studies of influenza, dengue, and yellow fever, by Henry Carter, who was recognized as an authority on these subjects.

The story of tropical medicine, by Wilson, closes with a consideration "of fierce, deep, black mysteries" as he terms them. Every part of this chapter is engaging and of scientific value. This is followed by a chapter on "Damn the Mosquitoes!"

Finally, a consideration is given specifically to the development of what is termed "banana medicine" through the leadership and constructive interest of the United Fruit Company. This organization has served as a pioneer in stressing the importance of scientific medicine and public health as a business. It takes no credit for philanthropy in its operations, but through its pioneering in the development of lands for the growing of fruit much has been determined concerning tropical diseases.

The two closing chapters give a dynamic and potentially important consideration of the need of another Walter Reed and the significance of tropical medicine in relation to the United States. Sumner Wells stated at the Rio Conference six weeks before Pearl Harbor: "My government believes that we must begin now to execute plans vital to the human defense of the hemisphere, for the improvement of health and sanitary conditions, the provision and maintenance of adequate supplies of food, milk, and water, and the effective control of insect-borne and communicable diseases.

"The United States is prepared to participate in and to encourage complementary agreements among the American republic for dealing with these problems of health and sanitation by provision, according to the abilities of the countries involved, of funds, raw materials, and services. . . ."

This book should be of great interest particularly to the physician and to all people who have an interest in developing the proper relationship between our country and our neighbors to the south.

W. S. Leathers, M.D.

Nashville, Tennessee.

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Brawner's Sanitarium IV

Camel Cigarettes VIII
Cincinnati Sanitarium, The 374
City View Sanitarium XVII
Coca-Cola V
Cook County Graduate School of Medicine V
Corn Products Refining Company XXII

Eli Lilly and Company XII

Green Vale Milk Co. 371

Hord's Sanitarium VII
Hoye's Sanitarium XVII
Hynson, Westcott & Dunning, Inc. XIII

Jersey Farms Milk Service IX

Louisville Neuropathic Sanatorium, Inc. IV

Madison Rural Sanitarium and Hospital VII
Massey Surgical Supply, Inc. XXVII
Mead Johnson & Co. I, XXVIII
Merck & Co., Inc. VI
Milam, John S., Optical Company XX

Nashville, Chattanooga & St. Louis Ry. XVI
Nashville Pure Milk Company IX
Nashville Surgical Supply Co. III

Ottenville Tire Company IX

Parke, Davis & Company XI
Petrogalar Laboratories, Inc. II
Philip Morris & Co., Ltd., Inc. XXI
Physicians Casualty Association, Pbysicians Health Association V
Professional Directory XIV, XV

Saint Albans Sanatorium XIX
S. M. A. Corporation XXVI
Smith-Dorsey Company, The XIII
Smith, Kline, and French Laboratories XXIII, XXIV
Stokes Sanitarium, The X

Tafel, Theo., Company XX
Tankard, J. O., Insurance Agency IX

Upjohn Company, The XVIII

Wallace Sanitarium, The III
Westbrook Sanatorium X
Wine Advisory Board, The XXII

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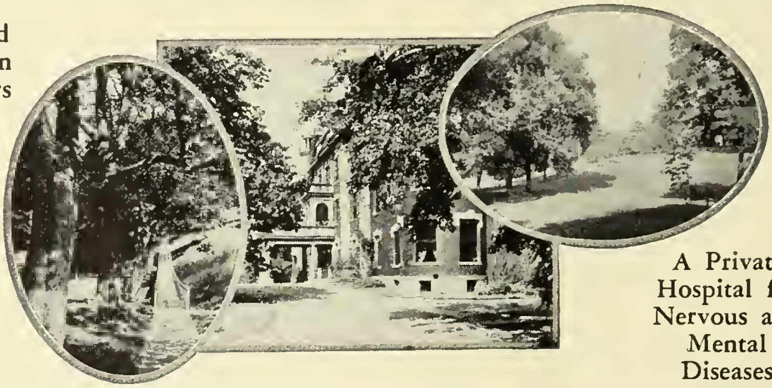

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The JOURNAL of the TENNESSEE *STATE MEDICAL ASSOCIATION*

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ISSUED MONTHLY, Under Direction of the Trustees
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H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Assistant Secretary-Editor
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Volume XXXV OCTOBER, 1942 No. 10

PROCEEDINGS OF THE HOUSE OF DELEGATES, ONE HUNDRED NINTH ANNUAL SESSION, TENNESSEE STATE MEDICAL ASSOCIATION HOTEL PEABODY, MEMPHIS, TENNESSEE

APRIL 14, 15, 16, 1942

TUESDAY AFTERNOON SESSION

Minutes of the meeting of the House of Delegates of the Tennessee State Medical Association, held in conjunction with the One Hundred Ninth Annual Meeting of the Association, at Memphis, Tennessee, April 14, 15, 16, 1942, convened in the Louis XVI Room of the Hotel Peabody, Tuesday afternoon, April 14, 1942, at 2:15 o'clock, Dr. E. R. Zemp, Knoxville, Speaker of the House of Delegates, presiding.

DELEGATES

The House was called to order by the Speaker and the roll of certified delegates called by Dr. H. H. Shoulders, secretary. Delegates, as follows, were present, representing their societies:

County	*Delegate*
Anderson-Campbell	None
Bedford	None
Blount	C. B. Lequire, Maryville
Bradley	None
Carroll	L. E. Trevathan, Bruceton
Cocke	None
Cumberland	None
Davidson	Geo. K. Carpenter, Nashville
Davidson	O. N. Bryan, Nashville
Davidson	D. W. Smith, Nashville
Davidson	J. C. Pennington, Nashville
Davidson	Sam J. Fentress, Goodlettsville
Davidson	J. A. Kirtley, Jr., Nashville
Davidson	Eugene M. Regen, Nashville
Davidson	Thomas F. Frist, Nashville
Davidson	Rollin A. Daniel, Jr., Nashville
Dickson	None
Dyer, Lake, Crockett	J. Paul Baird (Dyer), Dyersburg
Fayette-Hardeman	D. L. Brint, Bolivar
Fentress	None
Franklin	None
Gibson	F. Douglas, Dyer
Giles	W. K. Owen, Pulaski
Greene	W. T. Mathes, Greeneville
Grundy	None
Hamblen	W. E. Howell, Morristown
Hamilton	Jesse J. Armstrong, Chattanooga
Hamilton	J. C. Brooks, Chattanooga
Hamilton	J. Marsh Frere, Chattanooga
Hamilton	Cecil E. Newell, Chattanooga
Hardin, Lawrence, Lewis, Perry, Wayne	None
Haywood	None
Henry	None
Hickman	C. Gardner Bowers, Lyles
Humphreys	None
Jackson	None
Knox	M. S. Roberts, Knoxville
Knox	A. H. Lancaster, Knoxville
Knox	K. C. Copenhaver, Knoxville
Knox	Ralph Monger, Knoxville
Lauderdale	J. R. Lewis, Ripley
Lincoln	None
Loudon	None
Madison	Glenn D. Batten, Jackson
Madison	B. C. Arnold, Jackson
Maury	None
McMinn	L. H. Shields, Athens
Monroe	None
Montgomery	None
Obion	None
Overton	None
Polk	None
Putnam	None
Roane	None
Robertson	W. S. Rude, Ridgetop
Rutherford	None
Scott	None
Sevier	None
Shelby	E. M. Holder, Memphis
Shelby	W. L. Rucks, Memphis
Shelby	A. F. Cooper, Memphis
Shelby	W. C. Chaney, Memphis
Shelby	E. D. Mitchell, Sr., Memphis
Shelby	A. F. Porter, Jr., Memphis
Shelby	C. G. Andrews, Memphis
Shelby	H. W. Qualls, Memphis
Smith	None
Sullivan-Johnson	C. F. N. Schram, Kingsport
Sumner	C. D. Giles, Gallatin
Washington, Carter, Unicoi	Carroll H. Long, Johnson City
Washington, Carter, Unicoi	C. P. Wofford, Johnson City
Weakley	None
White	None
Williamson	J. O. Walker, Franklin
Wilson	None

Speaker Zemp declared that the meeting was open for business, as the elected delegates, the ex-presidents, and officers of the Association constitute a quorum. He appointed the following Reference Committees:

COMMITTEES APPOINTED

Credentials Committee — Dr. Ralph Monger, Chairman, Knoxville; Dr. Rollin A. Daniel, Jr., Nashville; Dr. C. G. Andrews, Memphis.

Committee on Reports of Officers—Dr. M. S. Roberts, Chairman, Knoxville; Dr. George Carpenter, Nashville; Dr. E. M. Holder, Memphis.

Committee on Reports of Committees—Dr. W. C. Chaney, Chairman, Memphis; Dr. K. C. Copenhaver, Knoxville; Dr. J. O. Walker, Franklin.

Committee on Resolutions—Dr. L. W. Edwards, Chairman, Nashville; Dr. A. R. Porter, Jr., Memphis; Dr. J. C. Brooks, Chattanooga.

Committee on Amendments to Constitution and By-Laws—Dr. E. H. Baird, Chairman, Dyersburg; Dr. Sam Fentress, Goodlettsville; Dr. Franklin B. Bogart, Chattanooga.

MINUTES OF LAST MEETING

Upon motion made by Dr. H. B. Everett, Memphis, and seconded by Dr. William Britt Burns, Memphis, the minutes of the previous meeting of the House were adopted as published in the August, 1941, issue of the JOURNAL without being read at the session.

CREDENTIALS COMMITTEE REPORT

Dr. Ralph Monger, Knoxville, Chairman, recommended the seating of Dr. C. C. Stockard from the Five-County and Dr. Roy M. Lanier from Haywood County as delegates to represent their counties.

Moved by Dr. K. C. Copenhaver, Knoxville, and seconded by Dr. H. B. Everett, Memphis, that the report be accepted. Put to a vote and carried.

NOMINATING COMMITTEE

Speaker Zemp ordered a five minutes recess, during which delegates from the three grand divisions of the state were to meet and elect members of the nominating committee. Upon reassembling the committee was reported as follows:

By Dr. A. R. Porter, Jr., for West Tennessee—Drs. W. L. Rucks, Shelby; Glenn Batten, Madison; and Paul Baird, Dyer.

By Dr. Sam Fentress for Middle Tennessee—Dr. J. C. Pennington, Davidson; Dr. C. D. Giles, Sumner; Dr. W. S. Rude, Robertson.

By Dr. Ralph Monger for East Tennessee—Dr. C. H. Long, Washington; Dr. J. M. Frere, Hamilton; and Dr. Ralph Monger, Knox.

REPORTS OF OFFICERS

Treasurer's Report

Dr. Zemp called for the report of the Treasurer.

DR. C. M. HAMILTON (Nashville): Mr. Speaker and Members of the House of Delegates: I would like to submit an audit of the books of the Association by a certified public accountant for last year as the Treasurer's report.

REPORT OF AUDIT FOR YEAR ENDED DECEMBER 31, 1941

To the Chairman and Board of Directors, Tennessee State Medical Association,
Nashville, Tennessee.

SIRS:

We have audited the cash receipts and disbursement records of the Tennessee State Medical Association for the year ended December 31, 1941. The results of our examination are presented in the comments on audit and on the exhibit and schedules designated as follows:

Exhibit "A"—Statement of Receipts and Disbursements, Year Ended December 31, 1941.

Schedule A-1—Cash in Banks at December 31, 1941.

Schedule A-2—Statement of Receipts by Months, Year Ended December 31, 1941.

Schedule A-3—Statement of General Fund, Year Ended December 31, 1941.

Schedule A-4—Investments, December 31, 1941.

Comments on Audit

Cash in Banks, $2,887.02, was verified by reconciliations of statements as rendered by the banks with the Association's records. All cash receipts appearing in the records were traced into the depositories. In verification of disbursements cancelled checks were examined as to signatures and endorsements, and the amounts and payees thereon were compared with the entries on the cash disbursement record.

Investments, $20,173.60, and Cash Available for Investment, $215.56. The Association had funds invested to the total amount of $20,173.60 at December 31, 1941. Investments were represented by $19,142.60 in First Mortgage Real Estate Notes, at cost, and $1,000.00, par value, Bonds of the Home Owners Loan Corporation, at cost $1,031.00. These securities were examined by our representative. On Schedule A-4 the items comprising invested funds are listed in detail. For the purpose of record all investments are carried at cost.

Mr. W. L. Whitaker of the First Mortgage Company, Nashville, Tennessee, informed us that the Association had with that company on December 31, 1941, a cash balance of $215.56, representing principal and interest collected on the mortgage notes not remitted to the Association at December 31, 1941.

General

Office furniture, fixtures, and equipment were insured against loss by fire to the amount of $500.00. The policy was renewed in the year 1939 for a period of three years and will expire July 20, 1942. Additional items were acquired in the year 1941 at a cost of $209.50, as shown on Schedule A-3. The fidelity bond of $10,000.00 on the Treasurer, Dr. Charles M. Hamilton, was continued in effect for one year by payment of the annual premium on April 10, 1941.

The records are maintained on a cash receipt and disbursement basis and we have not attempted to prepare a schedule of assets and liabilities at the close of the year, December 31, 1941. However, items of expense incurred in the year 1941 and unpaid at the end of the year consisted of the following:

Social Security Tax for the Last Quarter of 1941 (Payable in January, 1942)	$ 33.18
Cost of November and December, 1941, Issues of JOURNAL (including extra copies, index, roster, mailing, etc.)	813.25
Membership and Assessment Cards	41.00
Office Expense and Supplies	26.65
Total	$914.08

During the year 1941 the Association published twelve issues of the JOURNAL and paid for eleven issues, one being the December, 1940, issue. The November and December, 1941, issues of the JOURNAL were paid for in January, 1942.

Respectfully submitted,

April 9, 1942. OSBORN AND PAGE.

By HILARY H. OSBORN, C. P. A.

EXHIBIT "A"

Statement of Receipts and Disbursements for Year Ended December 31, 1941

RECEIPTS—SCHEDULE A-2

Dues (1,617 at $6.00 and one overpayment of $1.00)	$9,703.00	
Assessments (57 at $2.00)	114.00	
Interest on Investments	30.00	
(See A-4 for other interest on investments)		
Advertising	5,734.87	
Exhibit Space	1,120.00	
Subscriptions and Extra Copies of JOURNAL	32.40	
Cuts	67.75	
Refund, Postgraduate Course in Pediatrics	664.59	
Miscellaneous	11.00	
Total Receipts		$17,477.61

DISBURSEMENTS—SCHEDULE A-3

MEDICAL JOURNAL	$3,941.25	
Convention Expense	808.54	
Salaries	6,636.00	
Board of Trustees and Committees	73.88	
Medical Education Committee	750.00	
Investments	1,680.27	
General Expenses and Disbursements	3,599.68	
Total Disbursements		$17,489.62
Excess of Disbursements Over Receipts		$ 12.01
Represented by:		
General Fund Balance, December 31, 1940	$2,899.03	
General Fund Balance, December 31, 1941	2,887.02	
Decrease in General Fund Balance, Year Ended December 31, 1941		$ 12.01

SCHEDULE A-1

Cash in Banks December 31, 1941

American National Bank			
Balance per Bank Statement, December 31, 1941		$2,522.33	
Deduct—Outstanding Checks:			
No. 218—W. M. Hardy	$75.00		
No. 219—Willard Batey	62.50		
No. 220—Ideal Laundry	3.00	140.50	
Balance per Books, December 31, 1941			$2,381.83
Third National Bank			
Balance per Bank Statement, December 31, 1941		$ 505.19	
Deduct—Outstanding Checks		0	
Balance per Books, December 31, 1941			505.19
Cash in Banks, December 31, 1941—Exhibit "A"			$2,887.02

SCHEDULE A-3

Statement of General Fund for Year Ended December 31, 1941

Balance January 1, 1941		$ 2,899.03	
RECEIPTS			
Dues	$9,703.00		
Assessments	114.00		
Interest on Investments	30.00		
Advertising	5,734.87		
Exhibit Space	1,120.00		
Subscriptions and Extra Copies of JOURNAL	32.40		
Cuts	67.75		
Refund, Postgraduate Course in Pediatrics	664.59		
Miscellaneous	11.00		
Total Receipts		$17,477.61	
Total Balance and Receipts			$20,376.64
DISBURSEMENTS			
MEDICAL JOURNAL:			
Printing	$3,240.00		
Extra Copies	319.50		
Copyright	22.00		
Mailing	336.00		
Miscellaneous	23.75		
Total—Exhibit "A"		$ 3,941.25	
Convention Expense:			
Badges	$ 36.08		
Hotel	132.00		
Reporting Service	442.55		
Programs, etc.	168.21		
Miscellaneous	29.70		
Total—Exhibit "A"		$ 808.54	
Salaries:			
Dr. H. H. Shoulders	$2,400.00		
Dr. W. M. Hardy	1,800.00		
Miss Willard Batey	1,500.00		
Mrs. Ethel Harrison	936.00		
Total—Exhibit "A"		$ 6,636.00	
Board of Trustees and Committees:			
Meetings, Expense, Board of Trustees and Committees—Exhibit "A"		73.88	
Medical Education Committee:			
Postgraduate Instruction — Exhibit "A"		750.00	
Investments:			
Additional Investments—Exhibit "A" and Schedule A-4		1,680.27	
General Expenses and Disbursements:			
Postage	$ 190.00		
Office Expense, Supplies and Equipment:			
Expense and Supplies	175.83		
Equipment (Typewriter, Table, Filing Case, etc.)	209.50		
Rent	609.57		
Lights	22.95		
Telephone and Telegraph	222.05		
Letter Service	41.75		
Social Security Tax (Net)	66.36		
Towel Service	13.00		
Bond Premium—Treasurer	25.00		
Rent, Safety Deposit Box	3.60		
Reprints, etc.	74.42		
Travel	193.95		

SCHEDULE A-2

Statement of Receipts by Months for Year Ended December 31, 1941

Month	*Total*	*Dues*	*Assessments*	*Interest on Investments*	*Advertising*	*Exhibit Space*	*Subscriptions and Extra Copies of Journal*	*Cuts*	*Miscellaneous*
January	$ 4,070.39	$3,426.00			$ 394.39	$ 240.00	$ 6.00		$ 4.00
February	2,300.77	1,944.00			354.77		1.00		1.00
March	2,913.15	2,538.00			339.15		7.00	29.00	
April	2,110.57	618.00			379.98	440.00	8.00		*664.59
May	985.54	337.00			594.04	40.00	2.00	12.50	
June	508.23	72.00			436.23				
July	649.32	60.00			536.07	40.00	2.00	11.25	
August	536.66	78.00			458.66				
September	450.77	54.00			396.77				
October	662.82	126.00			527.42		4.40	5.00	
November	531.66				358.66	160.00		10.00	3.00
December	1,757.73	450.00	$114.00	$30.00	958.73	200.00	2.00		3.00
TOTALS	$17,477.61	$9,703.00	$114.00	$30.00	$5,734.87	$1,120.00	$32.40	$67.75	$675.59

*Refund, postgraduate course in pediatrics.

Cuts	$ 169.75		
Refunds and Miscellaneous	125.45		
Legal Services	1,150.00		
Accounting Services	155.00		
Tennessee Legislative Service	51.50		
Dr. C. M. Hamilton, Honorarium, 1941	100.00		
Total—Exhibit "A"		$ 3,599.68	
Total Disbursements — Exhibit "A"			$17,489.62
Balance in General Fund, December 31, 1941 — Schedule A-1			$ 2,887.02

SCHEDULE A-4

Investments December 31, 1941

First Mortgage Real Estate Notes:

Maker	*Dated*	*Due*	*Amount*
J. H. Horn	6-1-32	6-1-40	$ 1,843.81
General Securities Company	4-1-36	5-1-41	950.00
Anna Mary Bransford	7-2-37	10-1-47	2,100.00
A. D. Talley	7-1-36	4-1-41	800.00
Louise Shields	9-1-36	10-1-46	350.00
Eliza A. Matthews	4-1-37	5-1-47	1,690.00
D. Ray Thomas	3-1-39	5-1-49	2,998.55
M. E. Hooper	8-1-40	9-1-55	4,239.75
W. W. Johnson	11-1-39	12-1-54	400.00
*Julia R. Trabue	8-1-41	Monthly	3,770.49
Total			$19,142.60
Bonds:			
$1,000.00 Par H.O.L.C. 3's, May 1, 1952/44			$ 1,031.00
Total Investments			$20,173.60
Cash, Available for Investment, on Deposit with First Mortgage Company			215.56

*Item representing additional purchase of investments during year ended December 31, 1941, in total amount of $3,800.00, payment for which was made from general fund, $1,680.27, and from cash collections of principal and interest on investments and applied to extent of $2,119.73 by First Mortgage Company, the depository of the Association's mortgages.

CHAIRMAN ZEMP: The report of the Treasurer is referred to the Reference Committee on Reports of Officers, Dr. Roberts, chairman.

REPORT OF THE CHAIRMAN OF THE BOARD OF TRUSTEES

CHAIRMAN ZEMP: Now we will have the report of the Chairman of the Board of Trustees, Dr. C. M. Hamilton.

DR. C. M. HAMILTON, chairman (Nashville): The Board of Trustees has met twice during the last year. The first meeting was held at the Noel Hotel, Nashville, Tennessee, April 10, 1941, and the second meeting was called January 6, 1942, in the Headquarter's Office, 508 Doctors Building, Nashville, Tennessee.

Those present April 10, 1941, were: C. M. Hamilton, Nashville; E. R. Zemp, Knoxville; L. W. Edwards, Nashville; Franklin B. Bogart, Chattanooga; J. B. Stanford, Memphis; H. H. Shoulders, Nashville.

The Secretary-Editor informed the Board that the Cooperative Advertising Bureau had requested that advertising matter be allowed to appear on the same pages of the TENNESSEE STATE MEDICAL JOURNAL with scientific material. The Board took the position that this change should not be permitted until further consideration.

A proposal by the Cancer Committee that an educational program be conducted similar to that recently fostered on pneumonia was considered, and it was decided to authorize the Cancer Committee to work out a plan with the Department of Education and to submit a definite and specific plan to the Board for approval.

The appointments and reappointments to the Standing and Special Committees were made, and since the names of the appointees appear in the JOURNAL and the program they will not be listed at this time.

In attendance of the call meeting of the Board of Trustees, January 6, 1942, were: C. M. Hamilton, Nashville; Franklin B. Bogart, Chattanooga; E. R. Zemp, Knoxville; J. B. Stanford, Memphis; L. W. Edwards, Nashville; Hiram A. Laws, Jr., Chattanooga; W. M. Hardy, Nashville; H. H. Shoulders, Nashville.

In the Secretary's report the question of membership dues of those in active service of the Army, Navy, or Marine Corps during the period of emergency was raised, and after much discussion the following resolution was adopted by unanimous vote:

Be It Resolved, That the Board of Trustees recommend to the House of Delegates of the Tennessee State Medical Association that the dues of members, who become active as officers in the United States Army, Navy, or Marine Corps during the present emergency, be paid by the State Association from its reserve fund.

Be It Further Resolved, That this action not be retroactive; that is, that it not apply to dues already paid for any calendar year.

The Board recommended that future investments of the funds of the Association be in defense bonds, provided such a purchase is permissible. Upon investigation it was found that an association can buy a limited amount of the *F* and *G* Series of Government Bonds, paying approximately two and one-half per cent interest.

The Board also recommended that the Secretary write those who do not pay the assessment a letter requesting that the assessment be paid.

The question of emigre physicans was discussed at length. It was pointed out that an attempt is being made to place in operation a plan whereby emigre physicians would be issued a temporary license to practice medicine in Tennessee in locations designated by a committee.

After much discussion, the Chairman of the Board and the Secretary of the Association were directed to request the attorney of the Association, Mr. Charles Cornelius, to keep in touch with the developments in connection with this proposed plan of action and to oppose the operation by proper legal means.

The Board of Trustees endorsed the Program Committee's idea of a two and one-half-day meeting schedule consisting of twenty-five papers.

Respectfully submitted,
C. M. HAMILTON, Chairman.

CHAIRMAN ZEMP: The report of the Board of Trustees is referred to the Reference Committee on Reports of Officers, Dr. Roberts, chairman.

At the request of Dr. H. H. Shoulders, the resolutions contained in the report were referred to the Committee on Resolutions, Dr. L. W. Edwards, chairman.

There was some discussion on the floor of these resolutions.

Speaker Zemp then called for the report of the Secretary for the calendar year of 1941.

REPORT OF THE SECRETARY-EDITOR FOR CALENDAR YEAR 1941

To the House of Delegates of the Tennessee State Medical Association:

I have the honor to submit herewith a brief report of the activities of the headquarters office for the year 1941.

Membership

At the end of 1941 the membership of the Association was 1,682. This is an increase of nineteen members over 1940.

As previously reported, this figure represents well over ninety per cent of the doctors in the state who are eligible to membership. This is a fine showing as compared with any state. It is creditable.

Local Component Societies

At the end of 1941 we had fifty-six functioning local societies varying in membership from one in Jefferson County to 365 in Shelby County.

Changes in Societies During the Year

Last year the surrender of the separate charters of Washington, Carter, and Unicoi Counties was accepted by the House and the doctors of these respective counties joined in forming the Washington, Carter, and Unicoi Counties Medical Society with a membership of sixty-three. A charter was issued by the House.

The counties of McNairy, Chester, Henderson, and Decatur have joined with Madison County to form a society with fifty-one members to date this year. Formal actions by these counties have not been taken. That is, the old charters have not been surrendered and a new one issued.

The matter of combining small societies to make larger ones was discussed seriously by the House last year. It seems that the delegates went back home and discussed this question with their constituents. Several of the councilors have been active in promoting the idea in their respective districts. The Secretary-Editor wrote a letter to every society and to every councilor and, in addition, has conducted a correspondence in reply to inquiries in large volume. Undoubtedly, a sentiment is growing in favor of the idea of combining these small units. It is believed by your Secretary-Editor that it would be better for us to encourage the idea in every way possible and allow these wholesome events to take place by gradual process on the initiative of the local membership affected rather than for the House to attempt a compulsory action on the question at this time. This recommendation is based in part on the belief that there is a fairly strong current in the right direction, which in all probability will terminate, ultimately, by the proper action by these small societies. There are several such combinations in operation over the state which are attracting an increased amount of attention and interest. Furthermore, the present is no time for any society to take on new activities.

Finances

The Treasurer of the Association will make his report and submit an audit of the books of the Association by a certified public accountant. It is believed that reference in my report should be made to a few items.

The principal receipts of the Association are derived from the following items:

Dues	$9,703.00
Advertising	5,734.87
Exhibit Space	1,120.00

The interest on investments is another important item, but does not appear under this heading.

It will be observed that the income from advertising is the second largest item of income. The larger items of disbursements are printing, salaries, convention expense, and contributions to postgraduate committees. The income from advertising more than offsets the printing costs. It lacks only $803.13 of covering the salaries of all employees. Finally, there was an increase in the net assets of the Association for the year 1941 of $1,585.27.

I think all of you admit that this particular showing is evidence of sound administration.

I hope you will pardon me for making reference to this fact also. As the audit shows, the entire salaries paid the personnel of the headquarters, including the salary of the Secretary-Editor, amounts to $6,636.00 per year.

For the purpose of focusing your attention upon this one item, I will mention the fact that a number of state societies pay the Secretary or the Executive Secretary, as the case may be, a salary in excess of this amount. Mind you, this is not a complaint. It is a fact presented to you for the purpose of giving you a picture of what it takes to make a go of this enterprise.

Income from the Assessment

Members of the House will recall that a resolution was adopted at the last session of the House providing for an assessment of $2.00 per year, applicable to the year 1942—the funds so raised to be used by the Legislative Committee.

It is a pleasure to report that the results of that action up to April 10 is as follows: The sum of $2,416.00 has been received. To date there are 1,410 members, and of this number 1,208 paid the assessment. Only 202 failed to pay the assessment. It is believed that a vast majority of these will yet pay this assessment.

Next year, of course, is a legislative year. It is a fine thing that the Legislative Committee will have to its credit a sum which it can spend in an effort to carry forward the legislative program of the Association.

Membership in the Association and War Service

When we met last year our nation was not at war. A program of military preparedness was in progress. Today our nation is at war. It is expected that a large number of doctors will enter the service of the Army or Navy.

Your Board of Trustees, in its semiannual meeting, gave serious thought to the subject of the state dues of these members. It is of interest to all that the membership of these men be kept alive during the period of their service.

Your Secretary-Editor, of course, cannot issue a card of membership to a doctor unless he is certified by a local component society and his dues paid. If the secretary of each local component society will certify to the state office the membership of the member or members from his society in service, and if the Secretary-Editor is authorized by this House to charge the state dues of each such member to the Association, then a card of membership can be issued and the member kept on the mailing list of the JOURNAL.

From the standpoint of finances, it is the same thing as remitting the dues. From the standpoint of the member, he is carried on the roll of members and on the mailing list of the JOURNAL. The Secretary-Editor can make affidavit as to the paid-up circulation of the JOURNAL even though the dues of these members are paid out of funds of the Association.

A resolution on this question will be presented to you by the Board of Trustees, but I thought it appropriate to give you this particular viewpoint with respect to it.

A study of the effect of the military service on the membership of the Association was made, and while it is not conclusive, it indicated something of the drop in membership that will occur.

In the year 1941 the membership was increased over 1940 by nineteen. The membership as of April 10, 1942, is 117 members below the membership of April 10, 1941. The drop in membership, it appears, may exceed 200.

The above benefit to doctors in service should, of course, not be retroactive and should not apply to anyone who has not been a member heretofore. It could not be made applicable to a new member at all.

Journal

It is hoped that each delegate is familiar with the JOURNAL and its content.

It is with pride that we point to the fact that in appearance and content it excels most state journals.

An effort is made to fill the columns of the JOURNAL with matter of interest to the membership. No attempt is made to make it purely a scientific publication. We do not lose sight of the fact that it is actually an association publication or a house organ, and that the membership is interested in the doings of other individuals and groups over the state. We believe this is important.

The General State of the Organization

It is my belief that our State Association was never in better condition than at this moment. This opinion is based upon many factors, both tangible and intangible. It is based largely on the willingness of the membership to do things for organized medicine and do them with alertness. It is due also to the fact that the leadership of the Association has tried to make the Association of the greatest possible value to each and every member.

The membership of this Association is paying dues in the amount of $9,703.00.

The members of the Association are receiving in benefits some twenty-odd thousand dollars in expenditures in a variety of activities, such as the publication of a journal, the state society meeting, the postgraduate activities, and numerous committee activities, etc.

The efficiency and alertness of the organization makes possible these benefits to the membership. You promote them, take advantage of them, and make them a success.

I shall add one more word. Our future is dark right now. Our profession is called upon for sacrifice. How much we don't know. We have already sacrificed much. However much it may be, it will be made. It is one of the penalties of membership in a profession so altruistic as ours.

Respectfully,
H. H. SHOULDERS, M.D.,
Secretary-Editor.

April 14, 1942.

As a supplementary report, Dr. Shoulders read the following statement:

Another activity of this office was securing a change in the papers used in the commitment of the insane.

The 1940 House of Delegates passed a resolution requesting that this change be made. During the two years following that resolution the matter has been discussed with the commissioners of institutions. The present commissioner, under the guidance of the state attorney general's office, has changed this commitment paper, removing the objectionable phraseology.

A copy of the proposed change is enclosed.

Should it meet the approval of this House, future commitment papers will be so written.

STATE OF TENNESSEE____________COUNTY

I, ___________________, a practicing physician of the County of ________________________, State of Tennessee, hereby certify that I have this day personally examined ______________, alleged to be insane, and I find that ________ is in such condition of mind or body as to be a proper subject for treatment and care in a mental hospital; that ________________________ is about ____ years of age; is subject to no contagious diseases; that, according to the history of the case, the mental disorder is of __________ duration; that ___________ is not an idiot or feeble-minded person, and that the medical treatment has been______________________

____

____

(Here set out the medical treatment and all circumstances known to the physician to illustrate the same.)

Sworn to and subscribed before me,
This __________ day of _________________, 19____.
_____________________________________, M.D.
____
County Court Clerk.

Dr. Shoulders explained that this changed form for commitment of the insane to state institutions would be adopted by the Commissioner of Institutions if approved by the House of Delegates.

The Secretary's report was referred by Speaker Zemp to the Reference Committee on Reports of Officers.

REPORT OF THE DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

Dr. E. G. Wood, Knox, filed a copy of the October, 1941, issue of the JOURNAL which contained the printed report of the delegates to the American Medical Association held in Cleveland.

Chairman Zemp referred the report to Dr. Roberts, chairman of the Committee on Reports of Officers.

REPORT OF COMMITTEE ON SCIENTIFIC WORK

Dr. H. H. Shoulders, chairman, submitted a program as evidence of the work of the Committee on Scientific Work.

REPORT OF HOSPITAL COMMITTEE

Dr. E. G. Wood read the report.

Although there has been no business referred to the Hospital Committee, consequently no regular called meeting, we would like to call to the attention of this House of Delegates another item of national as well as of local interest and ask the question: "Is the federal plan to provide $3.00 daily for hospitalization out of Social Security funds just another attempt and step up?" And we also might ask the question, "Which came first, the chicken or the egg?"

American Hospital Association executives and "Blue Cross" directors recently posed the old question at a meeting in New York.

Now, what prompted the new proposals? Was it the long-considered plan for extending Social Security to hospital service, or was it actually the need for new revenue to be derived by two billion dollars in pay roll taxes, which such an extension would provide?

If the proposal is actually another measure for revenue, then it certainly should be debated solely on grounds of its expediency as a tax-raising measure and rejected on those grounds. It is obviously indefensible to raise war funds by measures which, once written into the law, cannot be replaced when the war is over without dislocating and endangering our whole Social Security system.

If the proposal is an honest piece of social legislation, proposed as part of an expanding program of social planners in Washington, then it needs more study and debate than can be given it in a war crisis. It should wait until the crisis subsides and Congress can be reasonably certain of what lies ahead for Americans.

It is more likely that the plan—in exchange for doubling the current pay roll tax—would eventually alter America's unique and efficient voluntary hospital system. It is certain that it would end the most extensive and promising privately-promoted social experiment of these times, the "Blue Cross" Hospital Service System. This system now serves thousands of Americans well, and it is being extended rapidly.

The March issue of *Hospital Management* reports a total of seventy-one approved "Blue Cross" hospital service plans in the United States, representing twenty-nine states and two provinces.

We are asking the government to stand by and give us its blessing to encourage us in the work we are seeking to do rather than to hamper us by ill-advised interference, however well-meaning, which offers a serious threat to the voluntary hospital system and to free medicine.

E. G. WOOD, Chairman,
Hospital Committee.

The speaker referred the report to the Reference Committee on Reports of Committees.

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. N. S. Shofner, Davidson, read the report.

Mr. Speaker and Members of the House of Delegates of the Tennessee State Medical Association:

Your Committee on Public Policy and Legislation wishes to report that during the past year it has been relatively inactive owing to the fact that there has been no session of the State Legislature since the last meeting of this Association.

Your committee has been alert to the importance of cooperation with the American Medical Association and has acted in accordance with requests from Mr. J. W. Holloway, Jr., acting director of the Bureau of Legal Medicine and Legislation of the American Medical Association. Specifically letters and telegrams were sent to members of the Congress protesting H. R. 4476, which would have permitted osteopaths to serve internships under the Army Medical Corps supervision and H. R. 8963, providing that chiropractors should have the privilege of serving the beneficiaries of the Employees' Compensation Act. It is gratifying to note that the various component county societies of the Association joined in these protests when they were so requested by the Committee on Public Policy and Legislation.

It is the intention of this committee to continue a vigorous fight to enact into law the Basic Science Act, which has been the principal objective of your legislative efforts for several years. Unless otherwise instructed, we shall try in every legitimate way to have such legislation enacted at the next session of the Tennessee Legislature.

Committee on Public Policy and Legislation:

(Signed) N. S. SHOFNER, M.D., Chairman.
M. S. ROBERTS, M.D.
H. B. EVERETT, M.D.
FRANK HARRIS, M.D.
T. R. RAY, M.D.
H. H. SHOULDERS, M.D.
HIRAM A. LAWS, JR., M.D.

Speaker Zemp referred the report to Dr. Chaney, chairman of the Reference Committee on Reports of Committees.

REPORT OF COMMITTEE ON MEDICAL EDUCATION

Upon call of the Speaker, Dr. J. Marsh Frere read the report.

Mr. Chairman and Delegates:

Your Committee on Medical Education had a meeting during the annual meeting of our society in Nashville last year. We all agreed to continue to urge immunization against preventable diseases and to request each county medical society in each of our sections to have separate programs dealing with cancer, tuberculosis, syphilis, and other health matters.

I was secretary of our local medical society and also a director on the Health Council, and, as such, was in a position to see that many of these health education programs were presented by our local doctors. It might interest you to know that from January 1, 1941, to April 1, 1942, 103 physicians gave talks on various health subjects; thirty-three radio addresses were given; twenty-eight talks were made on social hygiene; and ten talks were given on tuberculosis. Exclusive of radio listeners, the Health Council program reported an approximate audience totaling 14,256.

Dr. J. O. Manier, chairman of the Committee on Postgraduate Instruction in Internal Medicine, will make a detailed report to the House of Delegates in respect to the manner in which the course has been conducted to date. Dr. Manier has informed me that to date 920 doctors have taken the course, which compared favorably with the courses given in obstetrics and pediatrics.

Dr. J. C. Overall, chairman of the Committee on Child Welfare, wrote me to the effect that until recently he did not know that he was chairman of this committee. However, from his report you will note that he has done a good job in spite of the fact that he knew nothing of his appointment.

Dr. Ralph H. Monger, chairman of the Cancer Committee, informs me that his committee has continued its work on the same educational lines as has been previously outlined from year to year.

To date I haven't heard from Dr. W. S. Rude, chairman of the State Tuberculois Committee, and Dr. J. R. Reinberger, chairman of the Committee on Maternal Welfare, but I am sure that when these two doctors make their reports to the House of Delegates they will give a good account of the activities of their respective committees.

Respectfully submitted,

J. MARSH FRERE, M.D., Chattanooga, Chm.
J. M. LEE, M.D., Nashville.
W. C. CHANEY, M.D., Memphis.
R. B. WOOD, M.D., Knoxville.
H. B. GOTTEN, M.D., Memphis.
D. W. SMITH, M.D., Nashville.

The report was referred to the Reference Committee on Reports of Committees.

REPORT OF COMMITTEE ON MATERNAL WELFARE

Dr. Glenn Batten read this report for the committee.

This committee is in receipt of a communication from the Public Health Council with reference to the giving of child spacing information to women having medical indications. We have carefully considered this matter. It is our opinion that this society should define its position on this matter.

We have found:

1. That there are sound scientific medical reasons for certain women avoiding pregnancy.
2. That it is important that women who have definite contraindications to child-bearing be advised to avoid pregnancy and that an acceptable method, which must depend on the individual doctor and patient's preferences, should be prescribed. That this method should be an effective one and the patient well instructed is imperative. If continence is advised, it should be so emphasized that the patient realizes its importance. Experience in other states leads us to believe that real strides can be made in reducing maternal mortality by such methods.
3. That at present commercial interests are exploiting our patients through lay instruction, sale, and advocacy of contraceptives. The results of this unethical and dangerous situation are too often tragic. Women who should not have children become pregnant through a false sense of security, and many of them end up in the hands of abortionists with consequent death or permanent invalidism.
4. That the American Medical Association became concerned about this situation in 1937 and definitely went on record advocating the retention of this procedure in the physicians' hands. Also that the Council on Pharmacy and Chemistry has undertaken the testing of commercial contraceptives, bringing them under medical control.
5. That in the best interests of patient and doctor and public child spacing information should be a matter subject to the patient-doctor relationship and not exploited by commercial interests.
6. That action by this society defining our position would improve maternal health in this state by focusing the attention of our members on the vital necessity of retaining con-

trol of this procedure which is strictly a medical matter.

Therefore, this committee has formulated the following resolution and recommends its passage by the House of Delegates:

Now, therefore, recognition of definite medical indications for the giving of child spacing information being possible and it being desirable that this information be given only by physicians,

Be It Resolved, That the Tennessee State Medical Society go on record as approving the giving of child spacing information by or under the direct supervision of competent physicians whenever, in their opinion, indicated.

JAMES R. REINBERGER, Chairman,
Committee on Maternal Welfare.

CHAIRMAN ZEMP: As the resolution in this report is the chief thing for consideration, I am going to refer it to the Reference Committee on Resolutions.

REPORT OF COMMITTEE ON CHILD WELFARE

DR. OVERALL: Mr. Chairman, although I have no organized report from the separate members of the committee, all of the separate members have been making talks at various schools and Parent-Teacher Association groups in the interest of child welfare, and particularly in connection with the promotion of child health examinations as a routine yearly measure. In addition to that, they have been trying to promote the routine tuberculin testing of school children.

There has been a report handed to this committee by Dr. C. B. Tucker of the Tennessee State Health Department, and the committee gives its recommendation to this report and asks that the House of Delegates act on it. The report is self-explanatory.

Dr. Overall read a paper entitled, "Special Program of Diphtheria Inoculation and Smallpox Vaccination."

Special Program of Diphtheria Inoculation and Smallpox Vaccination

At the present time there is a shift of population brought about by the national emergency. This population shift is occurring mainly in areas where camps or industrial plants are being built or have been built. As a result of the population shift an increase in certain communicable diseases, such as diphtheria and smallpox, may be expected. Also there is a remote possibility that it may become necessary to evacuate children from the east coast cities. If this occurs there is a possibility that some of these children may come to Tennessee and an increase in these diseases, particularly diphtheria, may be expected.

It is the opinion of the Tennessee Department of Public Health that this question should be brought to the attention of the people of Tennessee and every effort should be made to increase the percentage of children under six years of age immunized against diphtheria and smallpox. Due to the national emergency it is believed that the prevention of diphtheria and smallpox might be brought to the attention of the people of the state more forcefully if a week is set aside for special emphasis to be placed on this subject. Even though a special week is set aside for this purpose, the increased effort toward immunization of children should continue for some time thereafter.

In order to bring this to the attention of the people of the state the following plan is proposed:

1. That a request be made of Governor Cooper that he declare May 1, 1942, as Child Health Day and the seven days, May 1 to 7, 1942, as a period for protection of susceptible children against diphtheria and smallpox;
2. That the Tennessee State Medical Association and the Tennessee Pediatric Association be requested to sponsor the program. Letters from the Secretary of the Tennessee State Medical Association to local medical societies requesting their cooperation in the program should be of particular value. Local medical societies in cities with radio broadcasting stations might be interested in promoting radio programs in regard to diphtheria inoculation and smallpox vaccination and in sponsoring spot broadcasts during this particular week;
3. That the Tennessee Parent-Teacher Association be requested to sponsor the program, and through their local organizations to promote interest among parents in the protection of children against these diseases;
4. That the State Department of Education be requested to sponsor the program, and through county superintendents of education and teachers instruct school children in the importance of smallpox vaccination generally and in the importance of their younger brothers and sisters being protected against diphtheria;
5. That newspaper releases be prepared by the Tennessee Department of Public Health for distribution to the newspapers in Tennessee, and that local health officers also be requested to promote publicity concerning the program;
6. That in counties with full-time health service the health departments distribute to physicians on request, at no cost, diphtheria toxoid and smallpox vaccine for the inoculation and vaccination of children;
7. That the Tennessee Department of Public Health also make available to physicians living in counties without full-time health service on request diphtheria toxoid and smallpox vaccine. These physicians would be able to obtain the materials either from the health officers of adjacent counties with full-time health service or directly from the Tennessee Department of Public Health, Nashville.

DR. OVERALL: The committee recommends this proposal on behalf of the delegates.

REPORT OF CANCER COMMITTEE

Dr. Ralph Monger read the report.

The Cancer Committee had a meeting at the time of the state meeting in Nashville in 1941. All members of the committee were present except one.

The committee decided as one of the projects, subject to the approval of the House of Delegates, to conduct an educational program similar to the one that had been previously conducted on pneumonia. A subcommittee composed of Dr. Howard King and Dr. H. S. Shoulders was appointed to work out the details. This was approved by the House of Delegates. In the meantime, Dr. W. C. Williams agreed to include in his budget sufficient funds for traveling expenses for doctors who would visit the various county societies and give programs or symposiums on cancer. This work has been handicapped due to the serious illness of Dr. Howard King. However, it is hoped that it will be carried out in a larger way in 1942 and 1943.

The Women's Field Army of the American Society for the Control of Cancer had a successful campaign drive in April, 1941, and several thousand dollars were raised which is being used for educational purposes.

RALPH H. MONGER, M.D., Chairman,
Cancer Committee, Tennessee State Medical Association.

Report referred to Committee on Reports of Committees.

REPORT OF COMMITTEE ON PHYSICAL THERAPY

Dr. J. A. Kirtley, Davidson, presented this report on behalf of the committee.

The status of physical therapy in the medical schools and hospitals of the state was given in the last report of the Committee on Physical Therapy. This report deals with the physiotherapy technicians in the state.

Our inquiry has found eight technicians who have fulfilled the requirements and are members in good standing of the American Physiotherapy Association. With the exception of one, these technicians are in charge of physiotherapy departments of medical schools and hospitals, hospitals largely devoted to treating crippled children, and to government hospitals.

Our inquiry has found approximately twenty-five technicians working as physiotherapists under physicians and surgeons in their office, or under recognized registered physiotherapists, and members of the American Physiotherapy Association. The members of this group are not, so far as we could find out, members of the American Physiotherapy Association, or registered by the American Registry of Physiotherapy Technicians. Some of these, I know, are good physiotherapy technicians who do excellent work, but who have not had the formal educational background for membership in the American Physiotherapy Association, or the American Registry of Physiotherapy Technicians. Many have been trained by the orthopedic surgeons or by heads of physiotherapy departments.

There is a third group of physiotherapists on which there is no available information. These people, it appears, practice physiotherapy as a profession, having no affiliation with the members of the medical profession and who work without medical advice or guidance.

Respectfully submitted,
J. J. ASHBY, M.D., Chairman.

Report referred to the Reference Committee on Reports of Committees.

REPORT OF COMMITTEE ON FRACTURES

Dr. Duncan Eve, Davidson, presented the report.

To the House of Delegates:

The Committee on Fractures has continued to function and wishes to submit a report of progress.

Our committee suggests the following:

1. A symposium on fractures at our annual meeting.
2. To continue a fracture exhibit at each meeting—these exhibits to be conducted locally.
3. That the emergency and definite treatment of fractures be taught to the interns.
4. That papers on fractures and cases of fractures be presented before hospital staff meetings.
5. That an annual meeting of each medical society be devoted to the care and treatment of fractures.

The treatment of fractures at the present time is largely a postgraduate problem.

In regard to ambulances being equipped with first-aid equipment and Thomas splints: A few years ago this committee contacted all active ambulance companies throughout the state and received all kinds of promises, but virtually no results. With the companies in the large cities, competition and speed are their main objects. In our opinion, there is only one way to secure their cooperation, and that is by a little legislation by the state laws.

DUNCAN EVE, Nashville, Chm.;
PAUL JOHNSON, Chattanooga;
EDWIN LIPSCOMB, Memphis;
TROY BAGWELL, Knoxville,
Committee on Fractures.

Referred to the Reference Committee on Reports of Committees.

REPORT OF LIAISON COMMITTEE

Upon call of the Speaker, Dr. L. W. Edwards, Davidson, reported: "We have had no call for liaison work this year and there is no report of this committee."

During the course of the session other committees were called and passed.

RESOLUTIONS

Under the head of new business, Dr. Chas. P. Wofford, Washington, read the following resolution:

Mr. Chairman:

According to Section IV, Article IV, of the Constitution and By-Laws of the Tennessee State Medical Association, veteran members are certified annually by the State Association. I should like to present the name of Dr. William J. Matthews, Johnson City, Tennessee, as a candidate for veteran membership. Dr. Matthews was born May 25, 1867, and received his medical degree at the Medico-Chi College in Baltimore, Maryland, in 1892. On April 18 of this year he will have completed his fiftieth year in practice, and at this very moment is occupying his office in the Hamilton Bank Building in Johnson City.

Action was taken by the Washington, Carter, and Unicoi Counties Medical Society at its regular monthly meeting on March 5, 1942, recommending that Dr. Matthews be made a veteran member of this Association.

I am respectfully submitting this to you, Mr. Chairman, for appropriate action by the House of Delegates.

CHARLES P. WOFFORD, M.D.,
Secretary-Treasurer.

Dr. H. H. Shoulders pointed out this was, in fact, an election and should come up Thursday morning.

The resolution was referred to the Committee on Resolutions by Speaker Zemp.

No other business appearing, the House recessed until 9:00 A.M. Wednesday.

WEDNESDAY MORNING SESSION

Speaker Zemp called the meeting to order at 9:30 A.M. Committee reports were called for by the Speaker.

REPORT OF COMMITTEE ON POSTGRADUATE INSTRUCTION IN INTERNAL MEDICINE

Dr. J. O. Manier, chairman of the committee, read the report.

The Committee on Postgraduate Medical Teaching submits the following report to the Committee on Education and to the House of Delegates.

The Postgraduate Program in Internal Medicine by Dr. Robert P. McCombs of Philadelphia, Pennsylvania, which opened February 24, 1941, has been a success from every viewpoint. The course has been offered in thirty-one teaching centers, and will not be completed in the state until January 31, 1943. Additional sections of the course have been given in Memphis and Nashville for the benefit of colored physicians. Total registrations to date in the state number 921. Dr. McCombs thus far has held 850 consultations with physicians and spoke before a total of 1,150 citizens in his lay lectures.

The course in internal medicine has been offered free of charge to all physicians in the military service who are now on active duty within the State of Tennessee, and at the present time there are 103 officers of the United States Army stationed at Camp Forrest, who are taking and apparently are enjoying and profiting from this course.

The attendance throughout the state has been excellent in view of the call to military duty of so many of our physicians who were active participants in these courses. Registration fees were refunded to those who were called to active duty between the date they enrolled and the date instruction began in their community.

Receipts from all sources for the course has so far to April 1, 1942, amounted to $25,127.00. Total disbursements for the same period have totaled $19,718.20. Balance on hand in the bank as of same date was $5,768.14. Except for some unforeseen hazard in the program every indication is that a substantial balance will occur at the close of the program which by agreement will be prorated back to the contributing agencies.

Bound copies of the instructor's lectures have been distributed to all physicians taking the course, and a total of 473 certificates of attendance have been issued to date to those whose attendance averaged eighty per cent or more.

The committee desires to express its appreciation to the Commonwealth Fund of New York, the Tennessee State Department of Health, the Tennessee State Medical Association, and the medical schools of Vanderbilt and the University of Tennessee for their financial participation in the postgraduate program, and further recommends that the House of Delegates, by resolution, express its appreciation to these contributing agencies for their financial assistance in making this program possible.

This committee also reports that in view of the widespread interest manifested in a similar program of surgical diagnosis by hundreds of physicians over the state, to be followed immediately upon the close of the course in medicine, the Commonwealth Fund in a recent communication has advised they will be delighted to give every consideration to an application from the Tennessee State Medical Association for funds for such a program and will place the matter before their Board of Directors for decision, this on condition that the other present contributing agencies to the program continue their part of the financial support with the same amounts.

It is the purpose of the Committee on Postgraduate Instruction to offer the proposed course in surgery without charge to all officers of the United States Army and Navy on active duty in the State of Tennessee during 1943 and 1944. It has been estimated by the Surgeon General's office that there will be on duty during this period in the various camps and stations in Tennessee between 800 and 1,200 men. The Commonwealth Fund—our major participant and contributing agent—has approved of this activity on the part of your committee and the committee feels that such action on its part offers an excellent opportunity by the Tennessee State Medical Association to make their definite contribution toward medical preparedness and effectiveness.

Further information regarding this course in internal medicine may be obtained at the Postgraduate Booth during the State Medical Meeting in Memphis or by writing the Postgraduate Committee, Tennessee State Medical Association, 1023

Third National Bank Building, Nashville, Tennessee.

Respectfully submitted,
J. OWSLEY MANIER, M.D., Chairman.
FRANKLIN B. BOGART, M.D.
W. C. CHANEY, M.D.
R. B. WOOD, M.D.
W. L. WILLIAMSON, M.D.

The report was referred to the Reference Committee on Reports of Committees by Speaker Zemp who added.

VOTE OF THANKS TO THE UNIVERSITIES

CHAIRMAN ZEMP: This goes to Dr. Chaney. I may be out of order, but I am going to entertain a motion at this time that the Secretary express to the University of Tennessee and the Vanderbilt University our appreciation of their help in putting on this program.

Will you make a motion to that effect?

DR. MANIER: I would like to move, Mr. President, that this body go on record as expressing their appreciation for financial participation in this program which we have conducted on the part of the Commonwealth Fund, which is our major contributing agency, the Tennessee Department of Health, and the medical departments of Vanderbilt University and the University of Tennessee. We can hardly include ourselves in it, although we are a contributing agency.

The motion was severally seconded, put to a vote, and carried.

SPECIAL COMMITTEE ON VENEREAL DISEASES

SECRETARY SHOULDERS: Mr. Chairman, Dr. Manier is connected with a committee which is in the nature of a special committee, appointed by the governor, on venereal disease control in the state, with reference to the problems brought on by the military emergency. Its duties were featured in the scientific program yesterday, and I thought it would be wise if the House would take some action with reference to it, especially if the members of the Association serving would like that.

I move that you ask Dr. Manier now to discuss that particular question in the nature of a report on the work which they are trying to do.

The motion was seconded, put to a vote, and carried.

CHAIRMAN ZEMP: Dr. Manier.

DR. MANIER: Mr. Chairman, some months ago, at the request of the State Board of Health, the governor of the State of Tennessee appointed an advisory board on venereal disease control to function in connection with the State Board of Health. This action, as I understand it, was premised on the fact that not only did venereal disease need control in this state, but also on the fact that the military camps throughout the State of Tennessee, particularly Camp Forrest, the biggest cantonment, at that time were running into an extremely high degree of incidence of venereal disease.

This committee appointed by the governor consisted of Dr. Hall of Memphis, Dr. Lancaster of Knoxville, Dr. Patterson of Chattanooga, Dr. Kampmeier of Nashville, and myself.

I find myself in a rather anomalous position in that the other four members of this committee, to a certain extent, would be rated as syphilologists, whereas I am an internist. I presume that and the geographical reason were reasons that the chairmanship of the committee happened to be thrust upon me.

It was our desire to bring this matter before the body of the Tennessee State Medical Association for these reasons: first, for an informative purpose, in order that the body and the House of Delegates might know what this committee had done; and second, to bring it before the House of Delegates in order that after you had been told in brief what action this committee had taken, you might see fit to approve or disapprove of the action of the committee.

There had been some discussion as to whether this committee should not, by action of the House of Delegates, be made a committee of the Tennessee State Medical Association. Speaking personally, I shall be entirely opposed to that for this reason: This is not a committee, over the appointment of which we have any control whatsoever, and while possibly those of us on it—the five of us—might feel that we were a perfectly safe committee, in our egotism, yet if this committee continues, in view of the fact that it is a political appointment, without any nominations from this body, you never know what type of committee you might get in the future. Consequently, it is not my judgment that this body should adopt this committee as an official committee of the Tennessee State Medical Association. But I do feel that when the action of the committee is laid before you, you should then approve or disapprove of what this committee has done.

So, in brief, then, with that preamble to give you an idea of its organization, the committee met in Nashville and spent one whole day concerning itself largely with these points: first, the drawing up of a proper routine management of syphilis in its varied aspects and varied age durations; second, a similar program of treatment for gonorrhea. None of us felt that we knew anything about treating gonorrhea, and the agenda of advice as regards treatment is going to be submitted along with that in connection with syphilis by the State Health Department to the profession at large. It was kindly drawn up by one of the profession here in Memphis whom Dr. Hall selected.

The next problem that came before the committee was that brought to us by the chief surgeon of the Fourth Corps Area located in Atlanta. They informed us that the incidence of venereal diseases in Camp Forrest had been just exactly twice what they felt ordinarily should exist, and that in view of the geographical location of Camp Forrest, at Tullahoma, where Camp Forrest is located, and secondly, Nashville, where the largest number of troops come in over the week end and where apparently the foci or sources of the increased infection are, something had to be done about that, both from the standpoint of protecting men and also from the standpoint of military efficiency. Unless we could insure the fact that the local governmental agencies and municipalities could and would handle the problem, they wished us to go on record of approving the invocation of the May Act.

I do not know whether you know what that is or not, but if you want to invoke the May Act, it is a terribly strong act. It is an act that was passed within the last year, providing that it was within the power of the military and naval authorities to invoke the aid of the F. B. I. to investigate any center, and that where there was any relationship at all on the part of any individual toward the propagation of venereal disease, not only the person who might participate in the sexual activities, but the person who might be the runner—the taxicab driver, the person who owned the property on which the house of ill fame stood, the hotel which could be shown knowingly to rent rooms—those people were all subject to prosecution and a fine and term of imprisonment for a period of time.

Your committee went on record as approving the invocation of this act unless the local communities concerned, within a period of three weeks after our meeting, showed that they could handle the problem.

There was no improvement in the incidence of disease, and I understand that the Fourth Corps Area is now preparing to set up the machinery to invoke the May Act. It sounds like a rather drastic kind of thing to do, and yet you cannot have a good army if it is going to be riddled with syphilis and gonorrhea, on the one hand, and even more than that, if there has been an incidence in the armed forces of two to one of what is ordinarily expected. And when you consider that men in the armed forces are forced, practically, to adopt prophylactic measures, the Lord only knows what is happening to the lay person in these communities who does not know anything about prophylaxis.

The next problem which came before the committee was the problem of trying to increase the reporting of venereal disease. After all, there probably is going to be no control of it unless we finally get away from the hush-hush attitude of venereal disease and make it really not only reportable, but reported, just like other infectious diseases. The suggestion was made by the committee to the Department of Health that steps be taken at the next session of the legislature by the Department of Health to try and get the present existing law amended so that all laboratories, not only public, but private, would be forced to report to the Department of Public Health all positive examinations, either smears or Wassermann reactions. We had this feeling about that, that there was no personal relationship between the examining laboratory and the patient, whereas the difficulty in getting cases reported now is that my patient comes to me and would have some objection to my reporting it. But if the laboratory was forced to report it, just like the public laboratories do—if the private ones had to do it, too—a good deal of statistical and factual data could be obtained to help the fight along.

Then, finally, the committee, after some discussion of the present eugenics or premarital law, took action on two problems that arise in relation to the existing law, and suggested that the State Health Department endeavor to have that law amended in these two ways: At the present time, there is in the existing law a paragraph which states rather vaguely that if an individual who is preparing to be married can show that his or her infection has existed over a period of time (as I recall it, I think it is three years), and that during that time he has taken as much, I think, as fifty-two weeks of consecutive treatment, and that his Wassermann is still positive, he can be rated as being Wassermann-fast, but eligible to become married. There is not in the law any machinery set up to determine those facts. They merely state those facts. In certain counties that fact has been determined by the county judge or county clerk. We had the feeling that decisions of that kind should be made by a doctor, and that the law should be amended to set up some machinery to determine whether an individual who still is Wassermann-fast should safely become married.

In addition, a suggestion was made that the law be so amplified that when these so-called Wassermann-fast cases come up, which we are discussing, for a marriage license, it become the duty of the issuing officer of the marriage license to inform the other party of the existence of the positive Wassermann. I think that is plain common sense and decency. We may have the feeling that there are some people who have been properly treated who are Wassermann-fast, but who could be properly and safely married, and yet I dare say there is not a man in this room, if he had a daughter and she had a negative Wassermann, and she was going to marry a man who was Wassermann-fast—there is not a man in this room, I believe, who would be very happy about it, and I do not believe there are many in here who would want to have it done. But if the second contracting party is informed of the existing condition in the other by law, there can be more enforcement of that feature of the thing.

Those were largely the broad, general things that were discussed by this committee, and action taken thereon, and again I would want to make it very clear to you that I think, first, it would be a very dangerous thing to make this committee our creature. We have nothing to do with the appointment of it. I think it would be a fine thing for this body to either approve or disapprove of the action which this committee has taken.

It is my understanding that Dr. Hall, on the floor of the general session, yesterday, pretty largely covered what I have presented to you. I wished to present it to you because you are the official governing body, you might say, of this organization, and to lay before you the action that was taken for your approval or disapproval.

CHAIRMAN ZEMP: Now will you state, without elaboration, just what your committee has recommended?

DR. MANIER: Very well, sir.

Our committee recommended the uniform treatment of syphilis and gonorrhea.

Our committee recommended that the law be amended so that all laboratories, both public and private, have to report to the proper authorities positive tests, either smears or blood examinations.

Our committee went on record as urging that the marital law be so amended that the question of the marriage of Wassermann-fast people be determined by physicians rather than by political office holders like the county judge and the county court clerk.

And finally, our committee recommended that the law also be amended so that if such a Wassermann-fast individual was approved for marriage, it become obligatory on the officer issuing the marriage license to inform the second contracting party of the existence of the positive Wassermann.

DR. THOMAS F. FRIST (Nashville): Mr. Chairman, this committee, headed by Dr. Manier, has done a remarkable piece of work which has entailed a tremendous amount of work and time and thought. As Dr. Manier said, this committee does not come under the jurisdiction of this particular body, but I move that this body, the House of Delegates, go on record as expressing our thanks and appreciation for the very excellent piece of work that is being done and trust that this work will be continued.

SECRETARY SHOULDERS: Dr. Frist, may I also suggest that you use the word "endorsement"? You said "thanks and appreciation." You want to "endorse" it also.

DR. FRIST: Approve.

SECRETARY SHOULDERS: Endorse or approve. All right.

CHAIRMAN ZEMP: You have heard the motion. Is there a second?

The motion was seconded.

CHAIRMAN ZEMP: Any discussion? We will limit it to two minutes.

DR. CARROL LONG (Johnson City): I should like to ask Dr. Manier what steps, if any, will be taken to insure the private physicians reporting the patients' correct names. It seems to me that the cooperation of the laboratory will depend largely upon some method to enforce the physicians reporting the proper names instead of reporting a false name or a number, some symbol.

CHAIRMAN ZEMP: You understand, this is just a recommendation. It does not make it obligatory or compulsory. It is recommended. That can only be done through the state law.

Dr. Manier, have you anything to say further?

DR. MANIER: No, I have nothing to say.

CHAIRMAN ZEMP: Any other discussion?

DR. OWEN (Dyer County): I would merely like to urge the other, in connection with this business of venereal disease examinations, to take into consideration that we have quite a tuberculosis problem, particularly in my own section, as well as in the rest of Tennessee, and we should take just as thoroughly into consideration that problem of tuberculosis.

CHAIRMAN ZEMP: Doctor, I am afraid you are out of order.

DR. OWEN: I merely wanted to call it to their attention.

CHAIRMAN ZEMP: Any further discussion? All those in favor of the motion say "aye"; opposed "no." The "ayes" have it. The recommendations of the committee are approved by this House of Delegates.

REPORT OF COMMITTEE ON MEMOIRS

Dr. J. P. Gilbert, Davidson, chairman of the committee, read the report.

The Tennessee State Medical Association, in regular session assembled, this April 14, 1942, hereby expresses its grief over the loss of the following members during the past year:

Thomas Jennings, Clinton.
J. T. Conditt, Flat Creek.
J. D. McCord, Lynchburg.
J. E. Carson, Maryville.
S. W. Alexander, McKenzie.
S. W. Huffman, McKenzie.
V. O. Buttram, Crossville.
Boyd R. Bogle, Nashville.
A. W. Harris, Nashville.
Adam G. Nichol, Nashville.
Hazel Padgett, Nashville.
C. N. Crook, Outwood, Kentucky.
B. W. Sutton, Huntland.
W. A. Jackson, Monteagle.
R. R. Roach, New Market.
D. E. Shields, Morristown.
Frank B. Easley, Chattanooga.
H. Quigg Fletcher, Chattanooga.
L. T. Stem, Sarasota, Florida.
Raymond Wallace, Chattanooga.
C. J. Carmichael, Knoxville.
Thomas Ap R. Jones, Knoxville.
W. F. Cannon, Fayetteville.
Earl Goyer, Jackson.
G. L. Williamson, Jackson.
L. C. Ogle, Etowah.
Frank Sanders, Adamsville.
R. B. Macon, Clarksville.
F. J. Runyon, Clarksville.
W. F. Roberts, Troy.
T. L. Phillips, Oneida.
D. M. Woodward, Huntsville.
W. T. Braun, Memphis.
W. C. Campbell, Memphis.
J. M. Oliver, Portland.
W. H. McCollum, Jonesboro.
E. C. Mason, Quebeck.
K. S. Howlett, Franklin.
J. S. Campbell, Lebanon.
R. Bernard Gaston, Lebanon.
L. L. Tilley, Lebanon.
J. H. Williams, McKenzie.
Joe B. Wright, Lynnville.
M. H. Wells, Watertown.

B. L. Owsley, Christiana.
A. H. Crouch, Forbus.
Edgar H. Ford, Knoxville.
William N. Lynn, Knoxville.
William B. Turner, Knoxville.
James R. Nankivelle, Athens.
W. H. Arrants, Sweetwater.
J. A. Price, Oakville.
Leonard Pogue, Nashville.
Lucius E. Kimsey, Ducktown.

To those who have answered the last call our duty is not yet done. It is upon us who are left that the responsibility rests to carry on their unselfish work and untiring efforts, and to make ourselves worthy to fill their places.

"So live that when thy summons comes to join
The innumerable caravan that moves
To the pale realms of shade, where each shall take
His chamber in the silent halls of death,
Thou go not like the quarry slave at night,
Scourged to his dungeon, but, sustained and soothed
By an unfaltering trust, approach thy grave
Like one who wraps the drapery of his couch
About him and lies down to pleasant dreams."

With love we commit these to the Great Physician, not to be forgotten, but to forever be revered in our memory.

DR. J. P. GILBERT, Nashville, Chm.;
DR. B. T. NOLEN, Franklin;
DR. W. E. BRYAN, Chattanooga;
DR. J. L. CROOK, Jackson;
DR. J. L. HANKINS, Johnson City;
Committee on Memoirs.

CHAIRMAN ZEMP: This report is referred to the Secretary for publication.

DR. S. R. MILLER (Knoxville): I move that the House stand for a moment in respect to these men.

SECRETARY SHOULDERS: I second the motion.

The House stood for a moment of silent tribute to the departed members.

REPORT OF COMMITTEE ON INDUSTRIAL HYGIENE

The chairman of the committee, Dr. Cecil E. Newell, Hamilton, read the report.

Gentlemen:

The Committee on Industrial Hygiene, in its fourth year, has continued to increase its endeavors.

We have held but one regular meeting since the last report, yet there has been much intercommittee communication.

The greatest step that we have taken in the last twelve months has been an attempt to establish a subcommittee on industrial health in each of the fifty-five county medical societies in Tennessee. Approximately three-fifths of the counties have to date appointed their committees. We thus have the nucleus for an organization that can initiate and promote an educational program in industrial health which our committee could heretofore not possibly do alone.

Already through these subcommittees we have gathered and classified the names of 564 physicians who do some amount of industrial practice.

As you have seen, we have an exhibit this year on one phase of industrial hazards. We hope to have at least one display of interest each year.

In January, Dr. Schram officially represented our committee at the American Medical Association's Fourth Annual Congress on Industrial Health, which is held each year in Chicago. The American Medical Association is urging us to have official representation again at the next one. What is your pleasure?

Respectfully submitted,
CECIL E. NEWELL, M.D., Chairman.
C. F. N. SCHRAM, M.D.
A. R. McMAHAN, M.D.
E. L. RIPPY, M.D.

SECRETARY SHOULDERS: Mr. Speaker and Members of the House: The present emergency situation has brought into sharp focus the matter of industrial hygiene and industrial surgery. I do not think there is any doubt that the two terms do not conflict, but need clarification. We are honored now by the presence of the head of the Bureau of the American Medical Association, who will not be here to discuss the report when it comes back from the committee for discussion. I should like to move then that Dr. Peterson be requested to discuss this particular matter before the House at this time.

As only one other report remained to be read, Speaker Zemp requested that it be submitted before hearing from Dr. Peterson.

REPORT OF ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Dr. B. F. Byrd, Davidson, chairman of the committee, requested the Secretary to read the report.

To the House of Delegates, Tennessee State Medical Association:

As chairman of the Advisory Committee to the Woman's Auxiliary I wish to make the following report:

Dr. Shoulders and I have met with the board occasionally and to the best of our ability have assisted the auxiliary when called upon.

Mrs. W. W. Potter has made a most excellent executive officer, has been tireless in her efforts, and contributed liberally of her time and means. While she and her board did not do everything they had expected to do, they have accomplished much and on the whole should be well pleased with the progress of the year.

Respectfully submitted,
B. F. BYRD, M.D., Chairman,
Advisory Committee to the
Woman's Auxiliary.

The report was referred to the Committee on Reports of Committees.

SECRETARY SHOULDERS: Now, I might amplify the statement I made a while ago by making this remark. There has been created in the State Department of Health a department on industrial hygiene. They, too—health departments—are taking this matter up. There is the possibility of conflict arising, as it has arisen before, between what is regarded as the functions of the private practice of medicine and the functions of a department of health in this connection, and, I think, to anticipate the future possibilities and to begin this activity right today is very important. I know Dr. Newell and his committee have been exceedingly active, and I think an effort has been made to classify doctors into groups of industrial surgeons, etc., and I do not know if we are not likely to make a lot of mistakes by making such a classification on the wrong basis.

I think it very wise that the sincerest thought be given to the problems connected with this evolution.

I move that we hear Dr. Peterson now.

The motion was seconded, put to a vote, and carried.

CHAIRMAN ZEMP: Dr. Peterson, we will be glad to hear from you. (Applause.)

ADDRESS BY DR. C. M. PETERSON

DR. C. M. PETERSON: Mr. Chairman, I am sure it is a great privilege for me to participate in your sessions here this morning.

One of the early convictions that the Council on Industrial Health of the American Medical Association arrived at was that our program was not likely to get very far unless we received wholehearted cooperation from all of the constituent state medical societies. So it was not long before we petitioned each state to create a cooperating committee, and you have heard the report of your own committee. We have also succeeded in interesting the association in forty other states and some seventy-five counties, not including those that Dr. Newell mentioned this morning, to spread the gospel which Dr. Shoulders has mentioned, bringing to the practicing physician an idea of the contribution he can make to the improved physical well-being of the industrial worker.

The situation is critical right at the present time, as anyone who reads the newspapers is fully aware of, because of the fact that no modern nation engaged in military operations can afford to lose the time of skilled and essential workers in war production. That is essentially the banner cry of the moment. How can we, as a profession, so conduct ourselves as to bring to the industrial worker an increased physical well-being so that he can attend to his duties on the assembly line or in the mine or forest or shop, or what not, so as to make a real contribution to the war effort?

We were discussing this matter this morning, and Dr. Shoulders very pointedly remarked that our early conception of industrial practice was pretty much limited to the remedial and reconstructive phases of traumatic surgery. We have expanded our viewpoint considerably since that time.

The other objectives which I want to speak about are preventive medicine in the plant and health education, health conservation (may I put it?), through physical supervision over industrial workers and education in hygienic living both inside and outside the plant.

Now, in the face of a shrinking professional population such as we are going through, it is going to be very difficult for the profession to meet these added demands upon the time and interest. But if the opportunity does come to you for the extension of your professional interest into the field of industrial health, I hope you are going to accept that responsibility and do the best job you can for the industrial health effort necessary to win the war.

Thank you very much. (Applause.)

REPORTS OF COUNCILORS

First District

DR. L. E. DYER (Greene): Mr. Speaker, Members of the House of Delegates: The report of the First District covers eleven counties, and there are one or two features that have been of interest during the past year. One is that we have lost only three members by death—I mean three physicians by death—one of whom was not an active member. The truth of it is, we have lost only two in the First District by death—two who were active members.

The largest group, of course, is Washington-Carter-Unicoi with sixty-six members and Sullivan-Johnson is next with forty-odd members.

The thing that is encouraging about it is that the scientific work has been continued on despite the fact that a number of the younger men have already been called to the service, and the regular scientific programs have been carried on during the past year as they have been during the previous years. So far we have not had any break in our programs, and the work has gone on successfully, I think, during the past year as it has before.

I will not take the time to report in detail.

Second District

CHAIRMAN ZEMP: Dr. S. R. Miller.

Dr. Miller presented his prepared report.

The House of Delegates:

We have made some progress in the Second Councilor District in the last year.

Anderson and Campbell Counties have been combined in one society with more than thirty members. Both societies had discussed the union, but no action seemed probable.

The Councilor appointed a committee from the two societies to prepare a constitution and by-laws for the joint society, keeping in mind the principles and procedure of both societies. The reorganization was later effected and the society is functioning.

The above committee and the Councilor wrote the members of Roane, Scott, and Union Counties and urged them to come to the reorganization meeting and become charter members of the combined society.

No one from either of the three societies came. Union County is not organized and has only two or three doctors in active work. Scott County had two deaths and that left six doctors in the county—all reported members. They report one meeting in the year with three in attendance.

Roane County reported twelve members, average attendance three, and five meetings.

Blount, Hamblen, and Knox are functioning well. Knox County reports a membership considerably larger than doctors residing in the county, due to membership from other counties.

A good many names are reported in service, but some secretaries evidently misinterpreted the question and reported every member, probably meaning in active practice.

Every organized society in the district made report this year. Some required two or three letters from the Councilor, but were cordially furnished.

Some secretaries reported men in armed service and veteran members, but all did not report these.

S. R. MILLER.

Third District

CHAIRMAN ZEMP: Dr. Patterson, Chattanooga.

Dr. Patterson presented his prepared report.

There are fourteen counties in the Third District. Several of them are small and rather sparsely settled. In six of them there are no medical societies; the other eight have local societies. Several of the doctors in counties having no society are members of societies in adjoining counties.

During the year 1941 considerable correspondence was carried on to form a combination society by joining Franklin and Grundy Counties with Coffee, Moore, and Lincoln Counties. Franklin and Grundy Counties have passed favorably on this plan; but as the other three counties are in another district, there has been some difficulty in getting the plan put through. Since the outbreak of the national emergency, the matter has not been pushed.

There have been several letters written to acquire information about doctors in the counties having no local societies.

Appended hereto in tabulated form are the statistical data from this district.

Respectfully submitted,
A. M. PATTERSON,
Councilor, Third District.

Fourth District

CHAIRMAN ZEMP: Dr. J. T. Moore, Algood.

DR. MOORE: I left my written report in the private car down at the Union Station and could not get in there this morning, and I will just report briefly from my district.

We have thirteen counties in the Fourth Councilor District. A large number of them are small counties, and while it is our desire to consolidate them and make larger societies, it is just simply impossible in my district. These little counties have little medical societies that function, such as Cumberland, Fentress, and Clay, but they cannot consolidate and meet with each other. It is thirty miles from Jamestown to Crossville and twenty-two miles from Celina to Livingston. Hence, these small societies function and we have a five-county medical society up there. About eight counties meet every two months. It is one of the best societies I ever saw. About twenty-five to thirty doctors meet every two months. All the doctors from these little counties meet in that society, and it is a very active, progressive society. We have active societies in Sumner, Wilson, Putnam, Cumberland—I cannot think of all of them. They are all busy doctors in the mountain country.

We have lost about half a dozen doctors by death. I do not know of any doctors that are not working hard—not making a great deal of money, but a little more than they used to.

I will turn in my written report when I get hold of it.

Fifth District

CHAIRMAN ZEMP: Dr. V. S. Campbell, Murfreesboro.

DR. CAMPBELL: Several of our counties are small. Moore County has not a doctor in it at all. I have written a good many letters and we have had a meeting over in Marshall County. Dr. Morgan is our best organizer, but the leading spirit seems to have fallen through. Most of the doctors in DeKalb are affiliated with Wilson County and the majority of doctors are affiliated with some society or other.

I have reports from three of the counties.

Sixth District

CHAIRMAN ZEMP: Dr. H. S. Shoulders, Nashville.

DR. H. S. SHOULDERS: Mr. Speaker, I do not have a written report. The district has been going on O.K. and I did not have any complaints, so all I can say is that so far as our district is concerned, I think it is O.K.

STATISTICS OF COUNCILORS' REPORTS

COUNTY and DISTRICT	*Members in County*	*Physicians in County*	*Eligible Nonmembers*	*New Members*	*Died During 1941*	*Dropped*	*Society Meetings*	*Average Attendance*	*Papers Read*
FIRST DISTRICT—									
Cocke ______	9	15	4	0	0	0	10	8	5
Greene _____	17	16	0	2	0	0	9	9.44	11
Sevier _____	12	13	1	0	0	0	(Inactive, 1941)		
Sullivan-Johnson __	44	54	10	3	2	2	10	24.4	9
Washington-Carter-Unicoi ____	66	63	2	3	1	0	10	35	13
SECOND DISTRICT—									
Anderson-Campbell __	31	35	4	2	0	0	12	6	8
Blount _____	23	26	2	1	1	0	48	9	36
Hamblen ___	13	15	0	2	0	3	10	12	10
Knox _______	160	139	5	6	1	0	39	53	33
Loudon _____	7	7	0	7	0	0	12	6	4
Roane ______	12	16	2	0	0	1	5	3	0
Scott _______	6	6	0	0	2	0	1	3	0
THIRD DISTRICT—									
Bledsoe _____	0	2	2	0	1	0	0	0	0
Bradley _____	12	16	4	1	2	3	4	12	4
Franklin ___	11	16	15	3	1	0	6	5	2
Grundy ______	4	4	1	0	1	0	1	4	0
Hamilton ___	160	216	25	9	3	1	35	54	33
Meigs (no society)		3	1	0	0	0	0	0	0
Marion (no society)		5	3	0	0	0	0	0	0
Monroe _____	13	14	0	1	2	0	12	8	16

McMinn	15	19	4	1	2	1	10	12	9
Polk	7	10	3	0	1	0	2	3	0
Sequatchie (no society)		2	2	0	0	0	0	0	0
Van Buren (no society)		1	?	0	1	0	0	0	0
Warren (no society)		12	?	0	1	0	0	0	0
White	10	11	1	2	1	0	6	5	5
FOURTH DISTRICT—									
Fentress	5	5	0	1	1	0	2	3	0
FIFTH DISTRICT—									
Bedford	13	8	1	2	1	3	12	8	12
Lincoln	14	20	2	0	1	3	12	8-10	10
Rutherford	23	20	4	3	0	1	12	14	12
SEVENTH DISTRICT—									
Giles	14	16	2	0	0	0	12	9	6
Hardin-Lawrence-Lewis-Perry-Wayne	22	31	8	1	0	2	11	15	33
Hickman	6	8	0	0	0	0	0	0	0
Williamson	11	22	4	2	1	3	4	7-8	2
EIGHTH DISTRICT—									
Carroll	11	17	2	0	4	0	2	10	6
Fayette-Hardeman	20	25	6	3	0	2	10	8	20
Henry	13	1	1	0	0	0	4	7	4
Madison	62	35	0	5	2	0	10	30	20
NINTH DISTRICT—									
Dyer-Lake-Crocket	26	34	9	0	0	0	10	18	26
Gibson	25	30	5	5	0	0	10	15	22
Haywood	7	11	4	0	0	0	12	6	12
Lauderdale	6	11	5	1	0	1	2	6	0
Obion	8	27	22	1	1	0	6	8	4
TENTH DISTRICT—									
Shelby	392	420	20	21	2	6	20	62	46

CHANGE OF BY-LAWS REGARDING REPORTS OF COUNCILORS

DR. J. B. STANFORD (Memphis): Mr. Chairman, there is a resolution suggesting a change in the by-laws in regard to the reports of councilors:

"*Be It Resolved,* That at future meetings of the House of Delegates the councilors simply state that their reports have been filed with the Secretary.

"*Be It Further Resolved,* That these reports be published in the JOURNAL of the Tennessee State Medical Association."

CHAIRMAN ZEMP: That will be referred to the Reference Committee on Resolutions.

ADDRESS BY COL. FRED W. RANKIN

SECRETARY SHOULDERS: Mr. Speaker, if I am in order now, I think the House is honored by the presence of the President-Elect of the American Medical Association, and he is to take a plane at 11:00 o'clock.

CHAIRMAN ZEMP: We are honored by our beloved Fred Rankin—Colonel Rankin.

COLONEL FRED W. RANKIN (President-Elect, American Medical Association; Consultant in Surgery to Surgeon General, United States Army, Washington, D. C.): Mr. Chairman, Members of the House of Delegates: I really had no idea that I was coming over here to meet with you this morning. You were so generous with your attention last night. I talked so long in the early part of the evening to you, and I spent the rest of the evening saying "that's good" to Dr. Moore. (Laughter.)

I have been very happy to be down here, of course, and my one single theme in going around over the country right now is the prosecution of the war and the status of the medical profession in that progress.

Now, as I indicated to you last evening, the Army needs doctors. The Army needs young doctors. I cannot evaluate all of the reasons that young doctors have for not going into the Army. Some of the reasons, I think, are excuses, not reasons. But I do take this opportunity again to urge on you, as older members of the profession, to stimulate the enthusiasm of the men that we need in the Army and assist them in making up their minds to take their part in the military program.

I do not know why it is not apparent to everyone that we are going to have a huge army. I do not know why there should be any question about having a splendidly equipped army so far as medical service is concerned.

I again emphasize to you that this is a young man's war from the standpoint of combat and from the standpoint of insular services, and that is just as true, perhaps more true of the medical arm of the service than it is of many of the other insular arms.

We just have to have more doctors, and we are going to have to urge these young men to come in and to take their proper place in the Army. It is a perfectly reasonable thing, perhaps, to be resentful about giving up a practice and dropping certain obligations, such as insurance and educational programs for one's dependents, etc., during a training period. But what apparently has not gotten home to a lot of people is that this is a war, as the President said last night, of survival. The President is quoted in this morning's paper as saying he thinks it will be at least three years for us. Now, that is something new since I left Washington. I read it in a Memphis paper this morning. I think that again emphasizes the thing that we are up against.

I do not know how many men we are going to need in medicine for the Army. It is a matter of arithmetic, and no doubt we are going to have to modify the tables of organization as time goes on. I do not think that we can take only so many doctors under any circumstances, but one doctor to one thousand or less than one thousand of population is going to have to be modified enormously, and I am sure that we are prepared to modify the Army's tables of 6.5 doctors per thousand whenever the doctor supply looks as though it is in danger of being depleted.

There is no question about it. We must have men. They must realize that this is their war. They must realize not only that it is their war right now, but they are not going to have any practice to come back to unless we win this war.

I am not so concerned about the sacrifices of the medical practice as I am about the future that is not any too secure, and will not be secure at all unless we do win this war.

Now, there are lots of men who are perfectly reasonably not in service at this time. I am sure we have got to keep the medical schools going. It would be utterly ridiculous to cut down production until we were absolutely forced to do so. I think we ought to keep the hospitals properly staffed in so far as it is possible. I believe that it is perfectly fair to assume that the medical schools and the hospitals and the group practices have been quite fair in their evaluation of the essential men.

I think that they have been quite fair in curtailing their staff, and as I go around from one part of the country to another, I find that this hospital or this medical school has given from forty to fifty to even fifty-five per cent of their staff on the non-essential list. That is a matter of grave importance, I am sure, because it is absolutely essential to keep up the production and to keep up as long as possible the medical standards in this country.

Now, medical standards have gone to pot (that is no news to you) in Great Britain and the occupied countries, and I understand in Germany also. But our production is up to standard now. We hope to keep it up to standard as long as it is possible, and we ought to make due allowance for all medical schools, hospital staffs, etc., and I believe that all of those people have been thoroughly honest in evaluating their essential men.

Now, it is a hard job for county and district committees and state military committees to say John Smith can go and Bill Jones has to stay at home. I can realize that it is a terribly difficult situation to meet many times. But I question if there have been many inequalities in the administration of those boards all over the country, and they are functioning, I understand, better and better, and more satisfactorily, everywhere.

Now, things are not going a hundred per cent smoothly in the armed services. They are not going a hundred per cent smoothly at home, and there is a certain amount of criticism justified of methods and production. I hope that it will continue to be constructive criticism because constructive criticism is useful and helpful. Remember, we have been at war but four months last Sunday, and taking the whole picture by and large, I think the pattern shapes up pretty satisfactorily. But the tempo of the war has speeded up enormously. The new spring offensives are starting right now. I do not know any more than you do what strategies are proposed, but I do know that we are face to face with the bloodiest summer of battle that the world has ever known, and the whole production program and training program and participation program is going to be speeded up in this country just as rapidly as it can be speeded up. We must be prepared for bad news and for more sacrifices. But I am confident that we are going to do our part, as far as the medical profession is concerned, and I think that it is the duty of the older members to stimulate these younger fellows to a more vivid realization of just what we are up against and just what they are doing, for I personally believe that the demand on the medical profession in the next eighteen months is going to be something huge and something unbelievable.

Thank you very much. (Applause.)

CHAIRMAN ZEMP: Thank you, Colonel.

This is a war of survival—but that should be modified. Who wants to survive under the rule of Naziism? I think we should go home and impress the younger doctors, and the older ones, too, for that matter, that this situation is very much like our patients with cancer in the breast. They put off and put off and put off until they become inoperable. Now, if some of you fellows that come within the age limit don't hurry up and see your doctor, Dr. Uncle Sam, then you are going to be inoperable at twenty-one dollars a month.

Our next proceeding is the election of councilors.

Colonel Rankin, we will excuse you, if you wish to go.

COLONEL RANKIN: Thank you so much.

ELECTION OF COUNCILORS

Councilors whose terms expired with this meeting were nominated for re-election. In no case was there any other nomination. Elections were as follows:

First District—Dr. E. L. Dyer, Greene.
Third District—Dr. A. M. Patterson, Hamilton.
Fifth District—Dr. V. S. Campbell, Rutherford.
Seventh District—Dr. C. D. Walton, Maury.
Ninth District—Dr. E. H. Baird, Dyer.

No further business appearing, the meeting recessed at 10:45 A.M. to meet at 2:30 P.M.

WEDNESDAY AFTERNOON SESSION

Meeting called to order by Speaker Zemp.

The Credentials Committee had no further report.

REPORT OF COMMITTEE ON REPORTS OF OFFICERS

The chairman of this committee, Dr. M. S. Roberts, Knox, reported as follows:

DR. ROBERTS: Mr. Chairman, your committee made reasonable investigation of the reports and are pleased to recommend the adoption of the report of the Treasurer. It is perfectly evident that the Association is being safeguarded financially through its Board of Trustees and the office management.

They also studied the report of the Trustees' meetings through its secretary, and their activities show that the Trustees have been administering the affairs of the Association efficiently and economically, and we take great pleasure in recommending the adoption of their report.

Also the report of the Secretary-Editor. It is very complete and concise, and it indicates that our headquarters is efficiently and economically managed.

Now, Mr. Chairman, I want to move, first, the adoption of the report of the Treasurer.

The motion was severally seconded, put to a vote, and carried.

DR. ROBERTS: I next move the adoption of the report of the Secretary of the Board of Trustees.

The motion was seconded, put to a vote, and carried.

DR. ROBERTS: And next, I will move the adoption of the report of the Secretary-Editor.

The motion was seconded, put to a vote, and carried.

DR. ROBERTS: Next we come to the report of our delegates to the American Medical Association, and in studying this report our committee is thoroughly convinced that our Association is really being represented in the House of Delegates of the American Medical Association. They have a detailed report that would indicate that evidently they made a daily record of the proceedings of the meeting. It is a very fine report, and our committee is pleased to recommend its adoption. I so move.

The motion was seconded, put to a vote, and carried.

CHAIRMAN ZEMP: The committee is discharged with thanks.

REPORT OF COMMITTEE ON RESOLUTIONS

Dr. Arthur R. Porter, Jr., Shelby, chairman, made the report.

DR. PORTER: The first one I come to is on the change of the form of the paper for commitment of the mentally diseased to institutions. Instead of certifying that the patient is insane, they merely state that the patient is suffering from a mental disease and should be treated in a mental hospital. This relieves the doctor of the liability of lawsuit. That was brought up two years ago, and finally this form was gotten up with the aid of the State's Attorney General's office, and when approved by the House of Delegates will be printed in that form.

I move that this form be approved as the printed specimen submitted with this report.

CHAIRMAN ZEMP: Any discussion?

The motion was seconded, put to a vote, and carried.

DR. PORTER: From Washington, Carter, and Unicoi Counties there is a report from the secretary-treasurer, Charles P. Wofford, on Dr. William J. Matthews, recommended for veteran membership.

SECRETARY SHOULDERS: These are certified to the state office by the local society, so they automatically become veteran members. They are elected to the American Medical Association, but they are certified from the local society.

DR. PORTER: "*Be It Resolved,* That the Board of Trustees recommend to the House of Delegates of the Tennessee State Medical Association that the dues of members who become active as officers in the United States Army, Navy, or Marine Corps during the present emergency be paid by the State Association from its reserve fund.

"*Be It Further Resolved,* That this action not be retroactive—that is, that it not apply to dues already paid for any calendar year."

I move that this resolution be adopted.

The motion was seconded.

DR. WOFFORD: May I ask, does the wording of that cover men who have received a commission in the United States Public Health Service?

CHAIRMAN ZEMP: I think that includes all that are in the service.

DR. WOFFORD: Because that is considered part of the armed forces.

CHAIRMAN ZEMP: In the employment of the government—whether it is public health or what it is—for the duration.

SECRETARY SHOULDERS: Mr. Speaker, I think that was omitted for several reasons in the wording of the resolution as it is presented. As a matter of fact, the United States Public Health Service is a constantly growing thing, in peacetimes as well as in war, and I think this is a war measure for those who are upsetting their activities and who are not following their usual activities. That was the intent, that it is for people who are taken into the armed forces of the country from civilian life.

Is that your idea, Dr. Stanford?

DR. STANFORD: Yes. It does not include those who are in public health.

SECRETARY SHOULDERS: And are not foregoing their usual practice.

DR. WOFFORD: Mr. Speaker, the reason I brought that question up is that there is one member of our society who was just called to active duty in the public health service. He is leaving his practice so he is serving during the war in the public health service.

DR. ROBERTS: Mr. Chairman, I rise to raise a question as to the financial side of this, as it might affect us during the coming year. It is entirely possible that there will be twenty-five to thirty per cent or maybe forty per cent of our membership that will be in the Army service at some time during this year. I am not raising this question to object to the resolution, but merely to bring up that point, citing that it may be necessary to have a special assessment put on this year again for that purpose.

CHAIRMAN ZEMP: The only thing that the society lacks is their dues because it is not costing the society anything to carry them.

DR. STANFORD: Mr. Speaker, it is our understanding and our belief that these men who go into the armed forces from civil life would not pay dues to the medical society anyway. We would simply lose their names as members. The money does not go any place. It just goes from one fund into another fund, and it is still our money. We would not get the money anyway, so it keeps up our subscription to the JOURNAL and that was the reason for it.

DR. J. C. BROOKS (Chattanooga): I am glad to hear that clarified. We have at Chattanooga commissioned men in the regular Army as members of our society, and they pay dues. What is their status with reference to this office? Does that carry out with your argument, Dr. Shoulders? Is your explanation there with reference to men in the regular service?

SECRETARY SHOULDERS: The members who are regular Army officers pay their dues through the service of the regular Army and not through a local society anyway. Their membership in the American Medical Association is achieved by membership in the United States Regular Army, whereas the Reserve Corps men maintain their civilian status while in the emergency. So the two have a different status so far as organized medicine is concerned.

DR. BROOKS: I think we have one or two members in our society who pay their local dues.

SECRETARY SHOULDERS: Their local dues only. They join up—that is true—with local societies wherever they may be stationed, but that contact with organized medicine is accomplished through their membership in the United States Army, and they have a delegate in the House of Delegates of the American Medical Association.

DR. A. F. COOPER (Memphis): We have men in the public health service who are members of the Shelby County Medical Society. They come in under our classification as associate members, which does not carry membership in the Tennessee state at all. We charge three dollars, whereas the regular membership for the state and local is twelve dollars, as you know, including both *Journals*. That three dollars merely includes our local JOURNAL and the expense of mailing it, and that is all. But they are identified with the medical profession locally, and if, as two or three have preferred to do, they want to transfer their membership and pay their regular dues, as they did in some other states, they can do so, and in that case, then, they pay full dues that you or I or anyone else would pay. But as associate members, they do not.

CHAIRMAN ZEMP: Any further discussion?

DR. H. B. EVERETT (Memphis): I think the resolution as presented should prevail rather than any amendment because most of these men that are in the public health service stay in the public health service anyway. I endorse the resolution as the committee has proposed it, not to include men in the public health service.

The question was called, the motion was put to a vote, and carried.

DR. PORTER: Next is a resolution that was attached to the report of the Committee on Maternal Welfare by Dr. James R. Reinberger, chairman:

"*Be It Resolved*, That there are definite medical indications for the giving of child spacing information and that it is desirable that this information be given only by physicians.

"*Be It Further Resolved*, That the Tennessee State Medical Association go on record as approving the giving of child spacing information by or under the direct supervision of competent physicians whenever, in their opinion, indicated."

I move this resolution be adopted.

The motion was severally seconded, put to a vote, and carried.

DR. PORTER: Next is the resolution introduced by Dr. Stanford:

"*Be It Resolved*, That at future meetings of the House of Delegates the Councilors simply state that their reports have been filed with the Secretary.

"*Be It Further Resolved*, That these reports be published in the JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION."

CHAIRMAN ZEMP: Any discussion?

DR. STANFORD: Mr. Chairman, that resolution involves a change in the by-laws, and it cannot legally be acted on today.

CHAIRMAN ZEMP: No, but it can be offered today.

DR. STANFORD: Yes, but it cannot legally be acted upon until tomorrow.

CHAIRMAN ZEMP: Is Dr. Baird here? Dr. Baird, this goes to you, and you report on it, please, in the morning.

Now, there is another resolution to come up tonight. I think we might as well dispense with that right now.

Is Dr. Pennington here?

AMENDMENT TO BY-LAWS

DR. JEFF C. PENNINGTON (Nashville): The Nominating Committee asked that this resolution be presented:

"*Be It Resolved*, That Chapter V, Section 2 of the by-laws be changed to read as follows:

" 'The committee shall report the result of its deliberations to the House of Delegates in the form of a ticket containing the name of one member for the office of president and of one member for each of the other offices to be filled at the annual session except the councilors.' "

The only change in that from the original is that instead of the Nominating Committee reporting three names for president, this allows them to report one.

DR. STANFORD: Mr. Chairman, I suggest that Dr. Pennington write the word "elect" after "president" because we no longer elect the president.

CHAIRMAN ZEMP: This will be handed to Dr. Baird also.

REPORT OF INSURANCE COMMITTEE

Dr. A. F. Cooper, Shelby, chairman, read the report for the committee.

The following report covers the operation of the Association's Plan of Group Disability Insurance for the year April 1, 1941, to April 1, 1942:

During the last year the National Casualty Company has paid eighteen claims to members of this group, the total amount of which is $2,394.82. In addition, four claims are pending. Advance payments have already been made on two of these, and two are new claims recently reported.

During the last year quite a number of the members have entered the Medical Corps of our armed forces and have consequently canceled their policies. This has been largely because of the reduction in the income of the insured. The war clause agreed to by the National Casualty Company provides for coverage for illness or accident which might occur to one in civilian life, even though the insured happens to be in the armed forces of the country. The company has returned prepaid insurance on these policies on a pro rata basis computed from the date they entered the service.

During this year cancellation on account of Army service, deaths, etc., have exceeded the number of new policies written. There are ninety-two policies now in force.

The J. O. Tankard Agency, the state representative of the National Casualty Company, states:

"We feel that conditions now make it more than ever necessary that members of the Association avail themselves of this protection. We are conscious of our obligation to bring it to the attention of the members. Our efforts to this end will be redoubled during the year. We are always open to suggestions and shall be glad to have any recommendations from you."

The relation with the National Casualty Company, in so far as the committee knows, has been entirely satisfactory in every way. Certainly no complaints have come to the committee which would have been their natural destination if there were any.

The Commercial Casualty Company has approached the committee with a proposition to write group noncancellable insurance for the Association provided they can obtain fifty per cent of the eligible membership, eligibility being interpreted as meaning those who are bona fide members of the State Association, as certified by the Secretary as of a given date. The committee has gone into the matter very thoroughly with representatives of both the National Casualty Company and the Commercial Casualty Company and we recommend that the contract with the Commercial Casualty be entered into under the terms of the contract between that company and the Tennessee State Medical Association, which are to be incorporated in a master policy to be signed by the officials of that company, provided that company may be allowed to supplement coverage for illness and accident now provided for under the terms of our present contract with the National Casualty, in addition to giving it the privilege to write coverage on any of the members who may now happen to be not insured with the National Casualty, but with the definite understanding that the insurance now carried by members of this Association and the Memphis and Shelby County Medical Society with the National Casualty Company shall not be jeopardized in any way. While the Commercial Casualty through its representative has agreed not to canvass any members of the Memphis and Shelby County National Casualty group or any of the members of the Nashville Academy group carried by the Continental Casualty Insurance Company in order to avoid the possibility of any disturbance of the insurance now carried by either of these groups, it is the opinion of the committee that the Commercial Casualty should be allowed the privilege of offering supplemental coverage to members of either of these two groups should any one of them so desire and the committee so recommends.

The committee feels the continuance of these two groups offering coverage for accident and illness under the terms of these respective master policies to members of this Association should be allowed.

A. F. COOPER, Chairman.
KYLE C. COPENHAVER.
C. M. HAMILTON.

DR. COOPER: I move the adoption of the report, Mr. Chairman, unless that should be referred to a committee.

The motion was seconded.

CHAIRMAN ZEMP: Any discussion?

The motion was put to a vote and carried.

CHAIRMAN ZEMP: Any new business to come up this afternoon?

REPORT OF COMMITTEE ON REPORTS OF COMMITTEES

This is the report of the Committee on Committees.

DR. W. C. CHANEY: Mr. Speaker and Members: I want to apologize for being late. I was in a meeting on postgraduate instruction in internal medicine down the hall and we did not quite get through, so I slipped out.

Your committee has met—Dr. Copenhaver, Knoxville; Dr. J. O. Walker, Franklin; and myself—and we have gone over these reports of the various committees and recommend to you their acceptance.

We would like to state that the following reports were not received by us:

The Committee on Scientific Work. We did not get their report.

SECRETARY SHOULDERS: That is the program. It was filed and was not referred.

DR. CHANEY: Then we did not get the report of the State Tuberculosis Committee.

CHAIRMAN ZEMP: That is the only one we did not have a report on.

DR. CHANEY: And Dr. Cooper has just given the one on the Insurance Committee, and that has been accepted.

And the Committee on Maternal Welfare.

SECRETARY SHOULDERS: It was referred to the Committee on Resolutions. Dr. Porter has that. It was referred by the Speaker to that committee because of an attached resolution.

DR. CHANEY: Since this report of the Committee on Maternal Welfare was heard by all of us, and since the resolution is the important part, I think our committee would go on record as accepting the other part of it.

As to the report of the Hospital Committee, we would like to urge that this committee follow closely this federal plan to provide three dollars daily for hospitalization out of social security funds. We read that with a great deal of interest, and we saw in it just what the chairman brought out, namely, that there is danger of socialized medicine. We are sure that they are on the right track and their work should be carried out no matter who the committee happens to be.

Public Policy and Legislation. We felt that we approve heartily of what they have done, and we realize that their problem becomes a difficult one, since they are dealing with politicians directly. We would like to urge that this committee keep up its alertness and diligence in the future as in the past, because, as Colonel Rankin warned us this morning, with the war on and so many men leaving to go into the service, unless we watch it quite carefully, the standard of medical practice is going to drop down very low, and this committee will have to see to it that it is held up, as far as legislation is concerned.

Now, I take it that Dr. Rude a little later on will make a report on the Tuberculosis Committee.

Now, the other committee that had to do with a state-wide campaign against diphtheria and smallpox. We urge that that work be carried out, because in wartime we are apt to have different kinds of diseases spreading very rapidly.

Industrial Hygiene. We were interested in that report because of the war. This chairman said that they had contacted all the medical societies of the state and have urged them to appoint subcommittees on industrial care. We see in war work a big problem of taking care of the ill, and believe that all of us should think in terms of keeping these men at work. The men who are in industrial hygiene will be called on, but a lot of us will see those men ourselves. For example, we see that ten times more disability has been caused by just the common cold than by strikes in the last year. We were delighted with the report that this committee made.

Thank you.

SECRETARY SHOULDERS: Mr. Chairman of the Committee: I think that the Legislative Committee would like an expression of the House on the question as to whether you wish that they go ahead and endeavor to pass the Basic Science Bill. That question was specifically stated in the report, and they wish an expression.

Now, does your committee recommend that they do that?

DR. CHANEY: We discussed that and we would like to recommend that they try to get that passed.

SECRETARY SHOULDERS: I think that that specific resolution should be stated by your committee so that the House would have that question before it for action, and that is the reason I rise now.

CHAIRMAN ZEMP: Dr. Chaney, will you just add that to the report of your committee there? Just add that on there in pencil, that you recommend that that be passed.

DR. E. H. BAIRD: What is the use of having that passed if the governor is going to veto it?

SECRETARY SHOULDERS: It might be passed over his veto if given time enough.

DR. CARROL H. LONG (Johnson City): Mr. Speaker, I believe that last year the Legislative Committee was charged also by the House to try to change the Medical Practice Act, making it secondary, however, to the Basic Science Bill. Might we also include in our instructions to the committee to continue their efforts along that line?

DR. M. S. ROBERTS: Mr. Speaker, by way of information, probably, to some, I would like to say it has come to me through our home office in Nashville that the chiropractors themselves are putting on a campaign of education, endeavoring to standardize their curriculum so that their graduates will eventually have the same course that was included in our Medical Practice Act, and they have a field agent for that purpose.

SECRETARY SHOULDERS: Mr. Chairman, I do not want to rise every time, but I think Dr. Long made the point that an amendment to the old Medical Practice Act was embraced in the program of the committee two years ago, and I think such an act is contemplated to dovetail in with the proposed amendment. I am sure that the committee, of course, is given rather wide latitude, but it wants the endorsement of the House back of it, so if you think it is a wise policy to try to achieve these legislative objectives, I think they understand what the objectives are.

CHAIRMAN ZEMP: Any other discussion?

SECRETARY SHOULDERS: And I second the motion by Dr. Long, if it is appropriate, that that be embraced.

DR. H. W. QUALLS (Memphis): I think Dr. Shoulders and the members of the Legislative Committee know how I stand, as Secretary of the Board of Medical Examiners, on the Basic Science Act. It would be nearly impossible to have a Basic Science Act that would be what it should be without some amendment to the Medical Practice Act. The Legislative Committee was kind enough to submit this proposed Basic Science Act to me, and after careful study, I offered some slight changes in it, which I am glad to say were accepted.

While I am on the floor, I would like to say to the members of the House of Delegates that we have something in this state that I think is really more serious than failure to pass the Basic Science Act. We have more than our share of quacks in this state. Under the present administration, an attorney has been appointed for all the various boards—including doctors and chiropractors and embalmers—eighteen in all. You can readily see he does not have a great deal of time to give to doing much work to keep us from having so many quacks in the state.

Also, under our present administration, it is the duty of the district attorneys general to secure indictments against these men. I may say that none of these fellows seem ready to assume this responsibility. I have tried very hard to get some work out of them in different counties and have found it quite hard to do.

I should like to relate in brief two cases that I am sure would be of interest. One is a Negro up here at Jackson, Tennessee, Madison County. He first started practicing medicine at Dickson, later at Huntingdon, later at Paris, then McKenzie, then he was in Lake County, and now he is at Jackson, Tennessee, with a Cadillac and a chauffeur. They would all write me that that fellow was registered with the county court clerk. After much investigation, it was found that he held a license that he must have stolen from some man—either secured some dead man's license or got it some other way—and the name was erased and his name was written in. He was indicted at Jackson. I took the records and appeared against him up there. The records showed conclusively that at the time this fraudulent certificate he held was dated, some of the members of the Board of Medical Examiners who had signed it were dead. They secured indictment against him in the lower courts, it was carried to the Supreme Court, and reversed on some technicality—and the fellow is still practicing medicine.

Another case I would like to relate to you (I could relate many) is this. A doctor in Henry County wrote me about a man up there selling an electric belt, and he wanted to secure an indictment against him. He would come under "vendors" and the fine would be four dollars. I wrote him a letter and cited him this section, explaining thoroughly how to secure indictment against the fellow. Two or three months later he wrote me and stated that he found that the judge of the circuit court and the sheriff of the county and the chairman of the grand jury, including many of the jurors, had bought the belt, were wearing it, paid the fellow fifty dollars apiece for it—and it is supposed to raise your blood pressure if it is low, and lower your blood pressure if it is high.

Now, I think this would be a good subject for this society, and it would be money well spent. Maybe it is because I have so much trouble with these fellows and have to write them so many letters. I have written them not hundreds, but thousands of letters in the last few years. I find that many of them are easily scared—and, by the way, that is the best way we can get rid of them. If they stand up and fight, we do not have much chance because the fine is only twenty-five dollars for practicing medicine, as you know, and it is certainly hard to get an indictment against them, especially if the local authorities like them.

I think it would be well, though, if there were some appropriation by the State Association to hire a lawyer to look after this. There is no appropriation made by the state to that fund except what I stated in the beginning, that there is a lawyer for all the boards, and that the district attorney general is supposed to have the duty in each district of securing indictment of these fellows. But if it is someone's business to look out for them, I think we would rid this state of a great many quacks.

CHAIRMAN ZEMP: Now, are you ready for the question? All in favor say "aye"; opposed, "no." So ordered. That will be amended so it includes Dr. Long's suggestion?

SECRETARY SHOULDERS: Yes.

CHAIRMAN ZEMP: Any new business to come before the meeting? If not, we will adjourn until tomorrow morning at 9:00 o'clock for the election of officers.

The meeting recessed at 3:15 o'clock.

THURSDAY MORNING SESSION

April 16, 1942

The meeting convened at 9:30 o'clock, Dr. Zemp presiding.

ELECTION OF OFFICERS

CHAIRMAN ZEMP: The House will please come to order.

The first order of business this morning is the report of the Nominating Committee, Dr. J. C. Pennington, chairman.

DR. PENNINGTON: The Nominating Committee wishes to submit the following report:

For president-elect, we submit three nominations, according to the by-laws and constitution: Dr. O. N. Bryan, Nashville; Dr. David Strayhorn, Nashville; Dr. Charles Trabue, Nashville.

CHAIRMAN ZEMP: Gentlemen, you have heard the nominations for president-elect. Are there any other nominations? If not, prepare your ballots.

Dr. Ralph Monger and Dr. George Carpenter will act as tellers.

The election was conducted.

SECRETARY SHOULDERS: Mr. Speaker, there were twenty-five ballots, all for Dr. O. N. Bryan.

CHAIRMAN ZEMP: President-elect.

All right, Mr. Chairman.

DR. PENNINGTON: For vice-presidents:

West Tennessee—Dr. F. Douglass, Dyer, Tennessee.

East Tennessee—Dr. B. L. Jacobs, Chattanooga, Tennessee.

Middle Tennessee—Dr. Sam Fentress, Goodlettsville, Tennessee.

CHAIRMAN ZEMP: Are there any other nominations? I will ask for a motion to suspend the by-laws, which we can do by unanimous consent, and let us elect these fellows by acclamation.

DR. C. M. HAMILTON: I will make the motion.

DR. PORTER: Second.

The motion was put to a vote and carried.

DR. PENNINGTON: For secretary-editor, there is some fellow named Shoulders over at Nashville.

Dr. STANFORD: I move that the Chair cast a ballot for Dr. Shoulders.

The motion was seconded, put to a vote, and carried.

CHAIRMAN ZEMP: I pass the entire vote of this large assembly for Dr. H. H. Shoulders, my partner for the last eighteen years, for secretary-editor. (Applause.)

DR. PENNINGTON: For trustee, Dr. W. C. Chaney of Memphis.

CHAIRMAN ZEMP: Any other nominations?

DR. STANFORD: Mr. Chairman, I move that the Secretary cast a ballot of the House for Dr. Chaney.

The motion was seconded, put to a vote, and carried.

SECRETARY SHOULDERS: It is a pleasure to represent the House in casting the vote of the House for Dr. W. C. Chaney for the Board of Trustees.

DR. PENNINGTON: For speaker of the house, Dr. E. R. Zemp.

SECRETARY SHOULDERS: The Secretary will assume the chair for the moment and ask if there are other nominations.

There being no nominations from the floor, the chair declared nominations closed.

DR. STANFORD: I move you, sir, that the Secretary and temporary Chairman cast a ballot for Dr. Zemp.

DR. PORTER: Second the motion.

SECRETARY SHOULDERS: All in favor of the motion say "aye"; opposed, "no." And the

Secretary cast the ballot of the House for Dr. E. R. Zemp to succeed himself.

Dr. Zemp, may I congratulate you, sir?

CHAIRMAN ZEMP: And I congratulate you.

DR. PENNINGTON: Delegates to the American Medical Association: Dr. E. G. Wood, Knoxville; alternate, Dr. E. T. Newell, Chattanooga.

CHAIRMAN ZEMP: Any other nominations? I think I will rule that that motion applies to all these things—just to save a little time. It may be a little out of order, but we will overlook it. Any other nominations?

MEMBER: Move the Secretary be instructed to cast the entire vote for Dr. E. G. Wood and Dr. Newell.

CHAIRMAN ZEMP: That is what we are going to eliminate now. I am going to instruct him to cast the vote.

SECRETARY SHOULDERS: You have got to elect him by the House, though.

CHAIRMAN ZEMP: You have elected him.

SECRETARY SHOULDERS: You have not put the vote yet.

The motion was put to a vote and carried.

SECRETARY SHOULDERS: All right. It is a pleasure to cast the ballot for Dr. Wood and Dr. E. T. Newell.

DR. PENNINGTON: For Public Health Council. It is required that we name three men for each one to be appointed.

SECRETARY SHOULDERS: Gentlemen, you know that some years ago the Public Health Council was created to sit as a board of directors over the Council of Health. According to the legislative act, the governor must appoint one of three nominees of this House for each appointment. So we are nominating now to the governor for appointment, three men for each appointment to the Public Health Council. He appoints one out of each three.

DR. PENNINGTON:

1. Dr. R. B. Wood, Knoxville.
2. Dr. W. E. Bryan, Chattanooga.
3. Dr. C. P. Wofford, Johnson City.
4. Dr. J. U. Speer, Pulaski.

SECRETARY SHOULDERS: To succeed whom?

DR. PENNINGTON: You mean Dr. Speer?

SECRETARY SHOULDERS: No. For what appointment are those three? For East Tennessee?

DR. PENNINGTON: Yes, for East Tennessee.

For Middle Tennessee:

4. Dr. J. U. Speer, Pulaski.
5. Dr. W. S. Rude, Ridgetop.
6. Dr. Charles B. Roberts, Sparta.

For West Tennessee:

7. Dr. J. E. Frazier, Newbern.
8. Dr. J. C. Pearce, Jackson.
9. Dr. Clyde Croswell, Memphis.

CHAIRMAN ZEMP: Gentlemen, you have heard the nominations. What will you do with them?

DR. STANFORD: Move they be elected by acclamation.

DR. PORTER: Second.

The motion was put to a vote and carried.

DR. PENNINGTON: Committee on Nursing Education and Nursing Practice—two out of five to be selected.

DR. STANFORD: We select five and the governor appoints two of them.

CHAIRMAN ZEMP: These are political appointments?

DR. PENNINGTON: Yes.

Dr. Cecil Newell, Chattanooga.
Dr. Edward D. Mitchell, Sr., Memphis.
Dr. George D. Boone, Paris.
Dr. R. R. Crowe, Nashville.
Dr. Edward L. Turner, Nashville.

CHAIRMAN ZEMP: You have heard the nominations.

DR. STANFORD (I seem to be making all the motions): I move they be elected by acclamation.

DR. PORTER: Second.

The motion was put to a vote and carried.

AMENDMENTS TO CONSTITUTION AND BY-LAWS

CHAIRMAN ZEMP: Dr. Baird, we will now hear your report on the Committee on Amendments to Constitution and By-Laws.

DR. E. H. BAIRD: A couple of minor changes were reported. One was a change in Section 2 of Chapter V. By-laws to be changed to read as follows:

"The committee shall report the result of its deliberations to the House of Delegates in the form of a ticket containing the name of one member for the office of president-elect and of one member for each of the other offices to be filled at the annual session except the councilors."

Approved by the committee.

CHAIRMAN ZEMP: The by-laws say now that we shall nominate three members from each district. We just think that is unnecessary, that there is no use in humiliating a man or raising his hopes that he is going to be made president—and we want to change the by-laws so that instead of nominating three men from the same division, we just nominate one man. That is the way we want to change the by-laws.

What shall we do with this report?

DR. FRANKLIN B. BOGART: Mr. Speaker, I think we should adopt it. They always have the privilege of putting a man up from the floor. So I move you that we adopt this amendment.

CHAIRMAN ZEMP: This does not change the nominations from the floor at all. It just changes the nominating committee's action.

DR. HAMILTON: Second the motion.

The motion was put to a vote and carried.

CHAIRMAN ZEMP: Dr. Baird, the next one?

DR. BAIRD: A slight change here. It evidently seemed as though it takes up considerable time for the reports of the Councilors, and I have a resolution on that here. However, I could not find anything in the by-laws about this. However, this can be added to the report:

"*Be It Resolved*, That at future meetings of the House of Delegates the Councilors simply state that their reports have been filed with the Secretary.

"*Be It Further Resolved*, That these reports be published in the JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION."

This was approved by the committee, and that was put in evidently to save time.

CHAIRMAN ZEMP: That amendment was made just to keep these different Councilors from coming here and reading those long reports about how many members they have and why some of them did not join. That is business in which the individual Councilors are interested. What we want is a matter of record, and that will go in the JOURNAL, and it will save thirty minutes or more —an hour, perhaps—at our meeting. Some of them are very long and tedious. That is the idea of that, to shorten the time of the session. They make their reports just the same, only they hand them to the Secretary, and if they want to make any remarks at that time, they can do so.

DR. STANFORD: Mr. Chairman, I believe Dr. Baird is right. I do not believe there is any specification as to exactly how they should make their reports. But it has been a custom so long. This does specify how they should report.

DR. BAIRD: Approved by the committee, and I move that it be adopted—including the second resolve.

DR. STANFORD: Second the motion.

CHAIRMAN ZEMP: All in favor say "aye"; opposed, "no." Therefore the by-laws are amended to that extent.

I think that covers it.

SECRETARY SHOULDERS: Mr. Speaker, if I am in order, I move that Dr. Bryan be notified of his election and be requested to come to the House, and that Dr. George Carpenter, Dr. Fentress, and Dr. Hamilton go out and locate him and escort him to the House.

DR. STANFORD: Second that motion.

The motion was put to a vote and carried.

CHAIRMAN ZEMP: The next meeting, gentlemen—a very important thing.

INVITATION FOR NEXT MEETING

DR. RALPH MONGER: Mr. Speaker, by a dam site, Knoxville is the best city in Tennessee, so we want to extend an invitation to the Tennessee State Medical Association to meet in Knoxville next year.

CHAIRMAN ZEMP: Any other nominations? If not, all in favor say "aye"; opposed, "no."

The motion was unanimously carried.

CHAIRMAN ZEMP: I think now it would be in order for somebody to give us a little eulogy on the hospitality and friendship and other good things that we have had in this city. Will somebody rise to that point and make a motion that thanks be extended to the Memphis and Shelby County Medical Society?

VOTE OF THANKS TO MEMPHIS

SECRETARY SHOULDERS: Mr. Speaker, I do feel that such an action should be taken, and I not only want to propose that the House take such action, but I wish to say further that there has been a great deal of comment by the membership at this meeting to the effect that the hospitality in Memphis has been very warm, and that it has been enjoyed and thoroughly appreciated.

I move that such an expression of this House go to the Memphis and Shelby County Medical Society.

The motion was severally seconded, put to a vote, and carried.

PRESIDENT-ELECT BRYAN'S ADDRESS

CHAIRMAN ZEMP: We have with us now Dr. O. N. Bryan, whom I will ask to come forward and make a few remarks. (Rising applause.)

PRESIDENT-ELECT BRYAN: Mr. Speaker, Members of the House of Delegates: I have no particular speech to make except that I want to thank my profession for this greatest of honors that ever has come my way. I want to say, furthermore, that as President-elect, whenever my turn comes to be of any assistance to the profession, I shall always try to carry on and do the best I can as I have done in the past. (Applause.)

CHAIRMAN ZEMP: Any new business?

DR. BOGART: Mr. Speaker, aren't you going to instruct a committee to escort the new officers into the session? Isn't that always done—both the new president and president-elect? It always has been done.

CHAIRMAN ZEMP: I think that it is all right to escort the new president, but we do not want to

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thrill our president-elect so much. He may not be able to stand it.

DR. BOGART: It was done last year, and I think it ought to be done now.

CHAIRMAN ZEMP: Well, we have no objection, of course. Is it customary to present the president-elect?

SECRETARY SHOULDERS: To go to the House and announce the results of the action of the House this morning.

CHAIRMAN ZEMP: I know, but is it necessary?

SECRETARY SHOULDERS: To escort them to the House? Of course, there is no precedent for the president-elect. The president-elect is a new affair, and poor Stanford has had to set all the precedents about that.

CHAIRMAN ZEMP: We will appoint a committee, then, of Dr. Bogart, Dr. Chaney, and Dr. Kyle Copenhaver to escort the newly-elected president.

SECRETARY SHOULDERS: Mr. Speaker, before they depart, I wish to announce that there is to be a meeting of the Board of Trustees in room 1100 immediately after adjournment, and that the president-elect, and, of course, the president who assumes office, are expected to attend that meeting.

DR. STANFORD: The retiring president is also, so you cannot have it until that is through.

SECRETARY SHOULDERS: That is true. I thought a vice could take over, if a vice-president is available. It is customary for them all to attend.

CHAIRMAN ZEMP: It is customary for the ex-president, the president, and the president-elect.

Any further business to come before the House before we adjourn?

DR. CECIL NEWELL (Chattanooga): Mr. Speaker, I would like to ask the House if authorization has been accorded our Committee on Industrial Hygiene to have representation in Chicago again?

SECRETARY SHOULDERS: Mr. Speaker, the committee's report was adopted, but I do not know that specific action was taken on that recommendation. Now, shall the House interpret that as meaning that that is authorized? If not, I will so move.

CHAIRMAN ZEMP: That representation has been authorized, then, because the recommendation has been adopted by the House.

DR. STANFORD: That is right. That is all the House can do. The House cannot supply funds anyway.

SECRETARY SHOULDERS: But they can recommend that the Board of Trustees do it.

CHAIRMAN ZEMP: Any further business? If not, gentlemen, that brings us to the end of this session. I will have to admit that I have been a little disappointed in the attendance of the delegates of the House. There are only twenty-five here this morning, and I think that after our society takes the trouble to send us as delegates, we should attend these sessions of the House of Delegates more consistently.

Now, we have tried our best to speed up the work of the House and not detain you long, and get through as quickly as possible. Whether we enjoy it or not, we accept the appointment as delegates to this Association, and we should attend the sessions. I hope that we will govern ourselves accordingly, and that you will also contact those that are not here and ask them to please attend the House of Delegates when they are nominated by their local societies.

I wish you all Godspeed for the coming year. I hope there will not be too much sorrow in it, and I think that the prayer that we all utter from the bottom of our hearts is not to give us a lighter load, but stronger backs, and I know we will come through eventually triumphant.

That is all.

The meeting adjourned at 10:00 o'clock.

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The DAILY LOG

ABORTIONS AND PROGESTERONE*

JAMES M. BROCKMAN, M.D., F.A.C.S., Memphis

Today the need of salvaging early pregnancy from threatened termination becomes one of paramount importance. Except in the past few years, to aid in this problem very little progress has been made. The exception came with the isolation of the active principle of the corpus luteum of the ovary which was a definite advance in therapy.

Taussig,[1] in his monograph on abortions, estimated that six hundred thousand to seven hundred thousand abortions occurred in this country annually with a maternal death rate of approximately two to four per cent.

It is impossible to arrive at any mortality figures in those cases where the abortion may have been the originating cause of the condition resulting in death, as this information rarely is contained in the vital statistics records. The morbidity and invalidism is likewise as difficult to estimate. It may be assumed that a portion of the available figures on the mortality and morbidity resulted from spontaneous noninduced abortions.

The etiology of spontaneous threatened abortions is numerous; however, the majority will fall in one of the following classes:

1. Fetal anomalies.
2. Placental diseases.
3. Constitutional factors.
4. Endocrinopathies.
5. Pelvic pathology.

Mall, as quoted by Taussig, states that serial microscopic section examination of the aborted embryo shows one-fifth of those up to the first month and one-half of those from the second month of gestation to be normal.

With this evidence before us, it would seem that the onset of a spontaneous abortion is nature's answer to a misdirected developmental anomaly, especially if we can readily rule out easily discernible causes. However, this leaves a recoverable fifty per cent to be distributed among other causes.

Diseases and abnormalities of the placenta, including faulty implantation, contribute their share, although we believe them more responsible for pregnancy termination in the middle and latter months of pregnancy.

Constitutional factors in the women are more apt to result in sterility than in abortion.

Each day more evidence is presented to show that endocrine factors play a most important part in fertility of the female, proper implantation of the fertilized ovum, and development of the embryo. It is also apparent that, if the endocrine functions are imbalanced, pregnancy will not easily take place; but, if it does, abortion will follow. This is substantiated by the ever-increasing evidence that the thyroid gland contributes both to habitual and missed abortion. The use of thyroid extract in the treatment of sterility is now practically a routine matter.

Chronic pelvic inflammatory disease, tumors of the uterus, ovarian neoplasms, and cervical infections, each in its own right, may result in an abortion.

Retrodisplacements of the uterus, a usual finding in about twenty-five per cent of women, we believe to offer a problem both in sterility and spontaneous threatened abortion. In those women in whom a retrodisplacement is asymptomatic, a very small per cent will show evidence of threatening to abort. When the retrodisplacement is symptomatic, nearly all cases will try to abort. After the uterus enters the abdomen, at which time the retrodisplacement is corrected, the pregnancy assumes the normal outlook.

In women who by our present criteria are physically normal and normally pregnant, the expected delivery of a normal, viable, full-term infant after control of threatened termination is justification enough to warrant every effort at prevention of abortion, both at the time of symptoms and prophylactically.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

The isolation of the active principle of the corpus luteum of the ovary, along with some understanding of the active role it plays in pregnancy, and its physiological effect on uterine muscle have been major additions to our therapy.

Macht[2] showed in experiments that isolated muscle strips from the uterus reacted weakly to posterior pituitary extract after having first been subjected to corpus luteum extract.

Clauberg[3] observes that the assumption must be made that there is a deficiency of the activity of the corpus luteum when abortion takes place before the stage of complete placental formation.

Elden[4] reports eight cases of habitual abortion treated with progesterone with two failures. Krohn[5] reports nineteen cases with five failures, while Falls, Lochner, and Krohn[6] were successful in thirty-four out of forty-one patients treated with progesterone.

During the past four years we have had forty-five cases to come under our observation for treatment of habitual and threatened abortion. In this series of forty-five cases uterine cramping was present in all cases, and in twenty-eight bleeding in varying amounts occurred simultaneously or shortly followed the onset of pain. Nineteen of the cases had a retrodisplacement of the uterus, four cases gave a history suggestive of habitual abortion, and one had a central placenta previa. There were fourteen failures in the entire series, of which five had retrodisplacements and four became incomplete before receiving any treatment. The one with placenta previa was terminated at five months for continued pain and persistent bleeding covering a two-month period; the bleeding varied from a daily spotting to a persistent blood loss the last three days before termination was undertaken, during which time the fetus died. If we eliminate the four without treatment and the one placenta previa, we have an accountable loss of only nine pregnancies out of the forty-five, or twenty per cent. Thirty, or sixty-six and two-thirds per cent, went to full term and delivered normal, viable infants; and, if we eliminate those who received no treatment, the recoverable per cent is still higher.

The high incidence of retrodisplacements, forty-two and two-tenths per cent, causing symptoms of threatened abortion illustrates the importance of this one factor in the production of spontaneous, noninduced threatened abortion. And it is here we feel that preventive treatment is the method of choice. In these cases progesterone is used for its sedative effect on the uterine muscle. Therapy is started with the diagnosis of pregnancy and continued until the uterus is well out of the pelvis. Our procedure is to give one-milligram doses three times a week until three full months have been reached and then once a week for four to six weeks. This procedure has been changed by the availability of oral progesterone.

No effort is made to disturb the uterus on diagnosing the retrodisplacement. Previous experience has been too uniformly unsatisfactory. In the cases where a pessary has been placed as an aid for sterility, and pregnancy results, the pessary is allowed to remain until four months have been reached, and during this time prophylactic treatment with progesterone is given.

The four cases of habitual abortion were given progesterone three times a week until the fourth month, twice weekly until the sixth month, and then once weekly for an additional six weeks. All went to term and delivered normal babies. One case began some cramping pains without bleeding at the third month, and daily doses of progesterone were given until the cramping had been relieved for at least two weeks.

Operative interference during pregnancy is not a common occurrence, but sometimes becomes necessary for an acute surgical condition. The high incidence of resulting abortions under these circumstances has made the use of progesterone as a prophylactic a necessity. Extreme care is most essential and especially so if the uterus must be disturbed. Six cases, not included in the above, requiring surgical intervention during pregnancy, have come under our observation the past four years. Each has gone to term and delivered a normal term infant. In the earlier cases we did not give as much progesterone as we do now. The dosage was increased for the immediate postoperative days, as the earlier cases seemed to show the need. We now give one milligram of progesterone every four hours for two days, then three times a day for the first week and twice daily for the second week. The patient is kept for several additional days in the hospital and gotten out of the bed very gradually.

Ten of the above cases were given oral progesterone,* which we have found to be quite satisfactory. One five-milligram tablet exerts an effectiveness equal to one milligram of the injectable, at least from a clinical standpoint. It eliminates the hypodermic factor, makes home treatment easy, but is still too expensive for the amount needed for good results. The same may also be said of the synthetic injectable type. There seems to be no minimum or maximum dose of progesterone. We find that control of symptoms has required a variable dose; however, if the symptoms of uterine contractions are not controlled by three milligrams daily, our present evidence points to the fact that larger doses will not control the symptoms. In the fact of cervical dilation, filling out of the lower uterine segment as denoted by a feeling of fullness around the closed cervix, and free bleeding, treatment has been of no value and any one or more of the above findings on examination has led us to prognosticate inevitable abortion in advance of its occurrence. We have not found that progesterone in the present average dosage has in any way served to prolong the onset of labor, nor have we prevented any case from aborting in which a possible malformation was present, as all the cases that went to term delivered normal babies.

Up to the present time, we feel confident to predict a normal baby if the symptoms of threatening abortion are controlled and pregnancy continues. We base part of our assumption on the fact that, regardless of the daily amount of progesterone given, even at the point of earliest symptoms, the process of uterine evacuation has continued. In four cases of this kind where we recovered the embryo definite abnormalities were noted.

CONCLUSIONS

1. The need of trying to save cases of threatened abortions is of importance.
2. Retrodisplacements of the uterus are a common cause of attempts at spontaneous abortion.
3. Prophylactic treatment in anticipated abortions is highly successful.
4. Progesterone is a valuable addition to the therapy of treating abortions.
5. Oral progesterone is effective.
6. The problem of continuing pregnancy in the face of abnormalities is questioned.
7. Prolonging the onset of labor by progesterone has not been proven.

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DISCUSSION

DR. C. G. BRINGLE (Memphis): Gentlemen, Doctor Brockman has covered this subject of abortion and progesterone quite thoroughly, and if we stick strictly to a discussion of abortion and the use of progesterone, it leaves very little for me to say in this regard. I would like to emphasize one or two points that Doctor Brockman brought out, particularly about the effective use of progesterone, either hypodermically or the oral method, which has proved most efficacious in the treatment of habitual abortion. Of course, that is given along with thyroid therapy, and there seems to be no doubt that it is very important that thyroid by mouth is an adjunct to the progesterone treatment.

It is very important, before wasting a large amount of this expensive drug, that we prove or be thoroughly satisfied within our own minds of the need of progesterone. By this I mean the question of whether this patient is really a pregnancy or not, because quite frequently we see individuals who have missed a period, or a period is late for some two or three weeks, they have a slight amount of bleeding, no cramping, and immediately those patients have been given large, expensive doses of progesterone in the face of an early, incomplete abortion. The history in these cases is very important.

Doctor Brockman brought out this point: that of all the cases that they had, one infallible sign was present, cramps. Progesterone is a uterine sedative; it is for the uterine musculature, and the cramps are a very important sign.

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*The oral progesterone (Lutocylol) used was furnished through the courtesy of Dr. R. C. Mautner of the Ciba Pharmaceutical Products, LaFayette Park, Summit, New Jersey.

Slight bleeding does not always mean that that individual needs progesterone, and if it is given, it is questioned whether it will benefit her at all.

In his treatment of abortion caused by retrodisplacement of the uterus, one point that I would like to bring out is the importance of knee-chest exercise, or rather the knee-chest position in the treatment of this condition. The knee-chest position, as most patients describe it, is a very silly position to be put into. It is a most embarrassing position in which to be caught, and there is not every patient who has a room in which she can lock herself and stay in that position—she might be caught in that elevation. I think the one most important point about the knee-chest position is the proper assumption of that position by allowing air to inflate the vagina once that position is assumed, and after the air has filled the vagina, the same thing is accomplished by allowing the patient to slide down into the Sims' position, and she can go to sleep there comfortably and safely.

DR. WILSON SEARIGHT (Memphis): I have a few remarks that I think are pertinent in regard to the management of the habitual aborter. First is the dire need for an accurate diagnosis as to why a given patient aborts. The work that has been done by Doctor Brockman is undoubtedly fruitful, and it has accomplished a great deal, as proven by his own figures, but it can only be said that the two great causes of abortion class themselves, first, faulty elements of conception, that is, faulty sperm, faulty ova, going together to make a faulty pregnancy. That is an undesirable thing; the other type is where either a faulty corpus luteum or certain conditions existing in the pelvis tend to cause increased uterine irritability to the point of expulsion of the products of conception. Since we do not want to try to save the faulty fertilized ovum, it would be an ideal to strive for, to make a diagnosis between that type of case and the type of case where we are trying to fight uterine irritability.

I think that we might bow our heads with more or less shame. Here in Memphis we have a teaching institution, but we do not have facilities for the determination of various types of hormonal assays which would throw some light on the situation. For instance, if we could make use of the Venning and Brown estimation of sodium pregnandiol glucuronidate and determine whether we have present a competent corpus luteum or not, then we would use this expensive drug intelligently and not empirically. I think a great deal will come in the future in the differential diagnosis as to why we use corpus luteum, and we will make some effort to diagnose the possibility of faulty products of conception so that we will bring this matter more to a scientific status rather than let it rest on the empirical basis it now rests on.

DR. CECIL WARD (Memphis): Doctor Brockman's paper is very fine. It was highly scientific and it should not be passed without further discussion because the incidence of abortion is high; spontaneous abortions undoubtedly account for fifty per cent of the abortions and we ought to know as much as possible about it.

I got up here to say that the early-bleeding pregnant woman should have one thing always done for her. This does not constitute particularly a discussion of Doctor Brockman's paper, but it is important. Her cervix should be visualized. If she is bleeding or having pain, you should look at her cervix. Not uncommonly you will find that the lower segment is completely effaced, the cervix is dilated, and the separated products of conception are lying in the cervical canal. There is not a bit of use in the world of putting that woman to bed, giving her progesterone and that sort of thing, and perhaps delaying her expulsion of an already separated ovum. That is rudimentary, but it is not done very much. When she bleeds and she is presumably pregnant, she is put to bed and treated as a threatened abortion and not as a complete abortion.

One other thing. Erosions of the cervix will cause bleeding in pregnancy, and they should be recognized early so that we will know how to treat them.

Doctor Brockman's paper was splendid.

DR. J. M. BROCKMAN (closing): I wish to thank each of these gentlemen for their kind discussion. More as an error of omission rather than one of commission, we left out the usual factors of treatment, such as bed rest and morphine. The regular treatment is given along with the progesterone. Each patient is, of course, examined to determine as near as possible that the abortion has not progressed too far for treatment. The prophylactic use of progesterone is going to give us our best results, however.

I agree with Doctor Searight that we are most unfortunate here in Memphis in not having facilities for determination of hormone assays. A city of this size should certainly have these facilities. This lack of methods for hormone assay leads us to treat on an empirical basis.

Our most successful group in the use of progesterone was in cases of habitual abortions, of which we did not lose a pregnancy.

We must not forget the association of mild states of hypothyroidism, accompanying cases of habitual abortion, and the necessary need of thyroid extract.

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H. H. SHOULDERS, M.D., Editor and Secretary

OCTOBER, 1942

EDITORIAL

MINUTES OF THE HOUSE OF DELEGATES

It is urgently recommended that each member of the Association read the proceedings of the House of Delegates as published in this issue of the JOURNAL.

Too many members regard the activities of the various officers and committees of the Association as being in the main political. As a matter of fact, the activities of a purely political nature constitute a very minor portion of their over-all activities.

Furthermore, a review of the minutes, if performed thoughtfully, will convince the most skeptical of the worth-whileness of the efforts made. It will also stimulate a sense of appreciation of those who occupy positions of leadership and serve the membership at a sacrifice.

MEDICAL SERVICE IN WAR INDUSTRIES

On another page of this issue of the JOURNAL is an advertisement for doctors to render service with the Tennessee Valley Authority.

The Authority has employed a fairly large number of very young doctors to carry on the medical activities of the organization. Many of these doctors are in draft age and from the standpoint of physical and professional fitness are available for service in the Army or Navy.

Many of the activities of the Authority, at the present time, are intimately related to the war effort. These same statements are true with respect to many industries, and even agriculture at the present time.

An opportunity is presented for young men and even older men, who have been disqualified on physical grounds for service in the Army or Navy, to render a service which is vital to the war effort.

A fairly large percentage of doctors, even young doctors, are disqualified on physical grounds for a commission in the Army or Navy. Many of these have felt very keenly a sense of disappointment. They, of course, prefer to serve in uniform and with troops. These patriotic impulses should find a large degree of satisfaction in serving behind the lines in an activity which supports the man in uniform and without which the man at the front could not serve.

Service in war industries today is not only essential; it is a service one can render without sacrificing professional dignity.

Industrial hygiene, as well as industrial surgery, are becoming specialized fields in medicine.

The activities of the Council on Industrial Health of the American Medical Association have been greatly broadened in recent months.

This field is calling for capable men to assume serious professional responsibilities. *The call is not for incapable men to take a job.*

Young doctors who are unable to obtain a commission in the Army or Navy should give serious thought to this field of service at this time.

NO GENERAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION IN 1943

The American Medical Association was scheduled to meet in San Francisco in June, 1943. Owing to conditions brought about by the war, the Board of Trustees of the Association took action to the effect that the general meeting will not be held.

There will be a meeting of the House of Delegates and the various executive bodies of the Association in Chicago sometime in June, 1943.

This action was based on several considerations. First, the session would cause a strain on the transportation facilities of the nation at a time when they are already congested. Second, a large proportion of doctors are in the military service and will be unable to attend. Third, the doctors left at home, in the main, are too busy to attend a medical meeting which involves the loss of many days from practice. Especially is this true when all the doctors who attend would be away at the same time. Fourth, it might be difficult to obtain scientific papers, of the excellent type usually presented, because doctors, like other patriotic citizens, are thinking mainly in terms of winning the war.

This action on the part of the Board of Trustees, no doubt, will be approved by the profession at large.

MEDICAL SERVICES AND THE PUBLIC

It seems that the time is ripe for the public to be told a few facts about medical services during the period of the emergency with a view to obtaining their hearty cooperation in the adoption and carrying out of policies which will, in the end, work to the benefit of the public.

First, a large number of doctors have entered the military service. In the main, they are the younger and more active doctors. The doctors left behind very largely are beyond military age or younger men who have been rejected on physical grounds for military service. For this reason the public cannot expect the same prompt service that has been available in the recent past.

Some days ago a doctor from a near-by town uttered an expression which is worth repeating. He said: "We doctors will give service, but we cannot give 'curb service.'"

Many people have been receiving curb service. This means they have called the doctor to see the patient when the patient should have been taken to see the doctor. When possible, this is a policy which should be followed. By so doing the doctor can render service to many more people.

At the present time, under existing speed regulations, a doctor consumes a great deal of his time in travel. It should be possible to minimize the time he spends in his automobile and to a corresponding degree increase the time he spends with sick people.

Furthermore, it is essential that the health and well-being of the doctors left behind be conserved in every way possible. The doctor cannot lose a night's sleep and be in a full state of efficiency the day following. Therefore, patients who are taken ill during the day should not delay until nighttime to call the doctor.

All in all, it might be better, for the public as a whole, if doctors should decline all calls at night except those which fall very definitely into the category of *emergencies.* Such an act would not be an act of cruelty. On the contrary, it would be an act to conserve the essential and vital services of doctors for the benefit of all. It would prevent the abuse of service by those who will not use good judgment in their own interest. To keep your doctor in a bad state of health from loss of sleep and excessive hours on the go would eventually bring a breakdown in all his services. And don't forget there are no replacements available after meeting the needs of the Army and Navy.

These are common-sense measures. They are obviously essential. It is believed that the public will cooperate in carrying out such policies when informed as to the necessity for doing so.

NEWS FROM AND ABOUT TENNESSEE DOCTORS IN THE MILITARY SERVICE

Alfred D. Mason, Jr., lieutenant commander, U. S. N. R., United States Naval Hospital, Portsmouth, Virginia.

Alexander F. Russell, major, Medical Corps, Fort Barrancas, Florida, to Second Auxiliary Surgical Group, Lawson General Hospital, Atlanta, Georgia.

James M. Brockman, major, Medical Corps, Station Hospital, Foster Field, Texas, to Camp Barkley, Abilene, Texas.

Samuel I. Wener, captain, Medical Corps, Memphis, to Station Hospital, Camp Forrest, Tennessee.

J. Palmer Moss, first lieutenant, Memphis, to Station Hospital, Camp Rucker, Alabama.

F. L. Alloway, lieutenant colonel, Kingsport, to Camp Butner, Durham, North Carolina.

C. M. Creech, Veterans Administration Facility, Fayetteville, North Carolina, to 3201 Hardy Street, Apartment A, Hattiesburg, Mississippi.

Madison S. Trewhitt, lieutenant, Medical Corps, Cleveland, to Station Hospital, Camp Shelby, Mississippi.

George W. Jackson, Jr., lieutenant, Medical Corps, Western State Hospital, Bolivar, to Station Hospital, Camp Blanding, Florida.

W. W. Watkins, lieutenant, M. A. F. S., Midland, Texas, to A. A. F. A. F. S., Station Hospital, Big Spring, Texas.

Douglas Chamberlain, captain, Medical Corps, Chattanooga, to Station Hospital, Fort Benning, Georgia.

P. M. Ding, captain, Miami, Florida, to Station Hospital, Keesler Field, Biloxi, Mississippi.

Alvin B. Tripp, 906½ South Dakota, Tampa, Florida, to 5803 Gordon Road, Tampa, Florida.

C. H. Barnwell, major, Chattanooga, to O'Reilly General Hospital, Springfield, Missouri.

Claud H. Taylor, Cleveland, to Station Hospital, Fort Benning, Georgia.

John L. Montgomery, Knoxville, to Box 46, Station Hospital, Sheppard Field, Texas.

Wiley D. Lewis, St. Albans Sanatorium, Radford, Virginia, to Station Hospital, Fort McClelland, Alabama.

Wallace L. Poole, Johnson City, to United States Navy, Norfolk, Virginia.

John Lillard, Benton, to 4506 General Pershing Street, New Orleans, Louisiana.

R. W. Polk, Memphis, to 72d Station Hospital, Fort Riley, Kansas.

Roscoe Faulkner, captain, Trenton, 0-314-544, 28th Surgical Hospital, A. P. O. 923, care Postmaster, San Francisco, California.

W. V. Sanford, major, Ripley, to Station Hospital No. 1, Fort Bragg, North Carolina.

W. C. Ruble, Jr., Newport, to Camp Rucker, Alabama.

Roderick C. Webb, Bemis, to Station Hospital, Camp Stewart, Georgia.

DEATHS

Dr. Max Kaplan

Dr. Max Kaplan, Memphis; Memphis Hospital Medical College, 1912; aged fifty-two; died August 8, 1942.

Dr. Spencer Boyd McClary, Sr.

Dr. Spencer Boyd McClary, Sr., Etowah; Memphis Hospital Medical College, 1904; aged sixty; died suddenly September 28, 1942.

Dr. Walter Scott Dotson, Jr.

Dr. Walter Scott Dotson, Jr., Westmoreland; University of Tennessee, Memphis, 1934; aged thirty-five; died September 26, 1942.

Dr. William Johnson Matthews

Dr. William Johnson Matthews, Johnson City; College of Physicians and Surgeons, Baltimore, 1892; aged seventy-five; died August 28, 1942.

Dr. William Delpuech

Dr. William Delpuech, Knoxville; University of Pennsylvania, Department of Medicine, Philadelphia, 1884; aged eighty-four; died August 7, 1942.

RESOLUTIONS

Dr. W. J. Matthews

Whereas, it has pleased our heavenly Father, in his infinite wisdom, to remove from our midst Dr. W. J. Matthews, who was for many years one of Johnson City's leading physicians.

We, the members of the staff of the Appalachian Hospital, bow in submission to the will of him who doeth all things well.

Whereas, Dr. Matthews was our beloved associate, one of the founders of the Appalachian Hospital, a loyal member of the Washington County Medical Association and a consecrated Christian man whose influence for good was brought to bear, directly and indirectly, upon the lives of thousands of men, women, and children.

We express our heartfelt regret at his loss, and order that a copy of this resolution be placed upon the records of this Association and that a copy be transmitted to Dr. Matthews' surviving relations, to whom we express our deepest sympathy in their sorrow.

Done this twentieth day of September, 1942.

John L. Hankins, M.D.
Harry D. Miller, M.D.

NEWS NOTES AND COMMENTS

Dr. N. B. Morris announces the opening of his office at 610 Doctors Building, Nashville, specializing in eye, ear, nose, and throat diseases.

MEDICAL SOCIETIES

Davidson County:

September 8—"Studies of Nutrition in Tennessee," by Dr. John B. Youmans. Discussion by Dr. W. C. Williams.

September 15—"Painful Nephroptosis," by Dr. Jefferson C. Pennington. Discussion by Dr. H. L. Douglass.

September 22—"The Treatment of Staphylococcic Infections with Report of a Case of Staphylococcic Septicemia Treated with Penicillin," by Dr. David Strayhorn. Discussion by Dr. J. Owsley Manier.

September 29—Major George Baker Hubbard of Camp Forrest presented Colonel Miles, chemical war officer of the Eightieth Division, who discussed the effects of various gases and chemicals used in the present war.

October 6—"Uses and Abuses of Digitalis," by Dr. W. R. Cate. Discussion by Dr. James S. Read.

October 13—"Objective of City of Nashville Venereal Disease Control Program," by Dr. M. C. Brown.

"Syphilis — Treatment Principles and Treatment Problems," by Dr. Harry Pariser.

Hamilton County:

October 1—"Minor Ailments of the Rectum and Anus," by Dr. Gene Kistler.

October 8—Clinical Congress.

October 15—"Appendiceal Oxyuriasis," by Dr. Forrest G. Bratley.

"Surgery of the Colon," by Dr. W. D. L. Record.

Knox County:

September 15—Appeal for Nursing Aids by Mrs. William J. Moore.

"The Range of the Normal Heart," by Dr. Rufus Smith. Discussion by Drs. Dan Thomas and Eugene Abercrombie.

Movie, "Aid in Muscle Training."

September 22—Medical History. Paper No. 5, "Age of Theory," by Dr. E. E. Miller.

"Chronic Diarrhea," by Dr. John Moore. Discussion by Dr. George Trotter.

September 29—"Common Athletic Injuries," by Dr. R. M. Powell. Discussion by Dr. Troy Bagwell.

Movie on Physiotherapy, "Effect of Heat and Cold."

October 6—"Version," by Dr. G. W. Stone. Discussion by Dr. A. Smith.

"Medical Historical Paper," by Dr. Hazel Nichols.

October 13—"Surgery of Peripheral Vascular Disease," by Dr. Turner Howard, Jr.

Movie, "Effect of Massage."

Papers scheduled to be read:

October 20—"Surgery of Chronic Arthritis," by Dr. George Inge.

Movie, "Technique of Massage."

October 27—"Subacute Bacterial Endocarditis," by Dr. H. C. Long. Discussion by Dr. Phil Thomas.

Washington, Carter, and Unicoi Counties:

We had our regular meeting September 1 at the Governor Taylor Hotel in Elizabethton. Dr. E. L. Caudill made a very interesting talk and told about two interesting cases of bone tumor. This was discussed by Doctors West, Hankins, Frost, Gibson, Long, and Bowman. Dr. E. T. West read a report on "Series of Inguinal Hernias" done in the past five years. This was discussed by Doctors Gibson and Caudill. The next meeting will be held in Johnson City on October 1.

C. W. FRIBERG, M.D.,
Acting Secretary.

Wilson County:

October 8—"Differential Diagnosis of Acute Throat Disorders," by Dr. J. R. Doak.

"Case Report," by Dr. Sam McFarland.

OTHER MEDICAL SOCIETIES

The Third Annual Medical Meeting of the National Foundation for Infantile Paralysis will be held in New York City on December 3 and 4, inclusive.

The meeting of the East Tennessee Medical Association has been postponed for the present year and possibly for the duration of the emergency.

The Middle Tennessee Medical Association will meet in Gallatin, Tennessee, on November 19, 1942.

Dr. Beverly Douglas, Vanderbilt Hospital, Nashville, is serving as secretary.

SOUTHERN MEDICAL ASSOCIATION

Believing that "medicine should not be frozen for the duration," the Southern Medical Association is proceeding with plans for their Richmond meeting. A good program has been arranged.

The meeting will be held November 10, 11, 12, 1942.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

The Use of Bulk Ether in Anesthesia. Harry Gold, M.D. The Journal of the American Medical Association, September 5, 1942.

In a study by the author and others in 1934, it was proven that ether from cans opened many times and stoppered with cork remained pure when tested for deterioration. Even when so lightly stoppered that evaporation took place, it remained free from aldehydes and peroxides.

In a series of twenty-five hundred surgical anesthesias from bulk ether drawn into cans as needed, anesthetists could distinguish no difference in effect on the patients. Ether in five-pound tins or thirty-pound drums may reduce the cost of ether about seventy per cent. In pouring ether from the large containers to small cans precautions against explosive conditions should be taken such as cigarettes, sparks, and insufficient ventilation of the storeroom.

INTERNAL MEDICINE

By R. B. WOOD, M.D.
By D. R. THOMAS, M.D.
Medical Arts Building, Knoxville

Electrocardiographic Changes in Old Age. Theodore T. Fox, M.D.; Joseph Klements, M.D.; and Emanuel E. Mandel, M.D., New York. Annals of Internal Medicine, August, 1942, Vol. 17 (O. S. Vol. XXII), Number 2.

Three hundred ambulatory Jewish people ranging in age from the seventh to the tenth decade were studied to determine the incidence of abnormal electrocardiograms. All had evidence of arteriosclerosis, sixty-two per cent had enlargement of the heart, twenty-three per cent had normal blood pressure, thirty-two per cent having systolic elevation only, and forty-five per cent having both systolic and diastolic.

Two hundred showed abnormal tracing, and of the normal one-half had a normal-sized heart. In the abnormal electrocardiographic group, enlargement of the heart was twice as common as normal-sized organs and seventy-eight per cent showed hypertension. In the normal electrocardiographic group, sixty-eight per cent had hypertension. There are forty with no hypertension and no abnormal electrocardiogram. The incidence of abnormal tracing increases with age as does heart enlargement. T wave shows a definite rise with age.

Progress in Internal Medicine, Diseases of the Heart, a Review of Significant Contributions Made During 1941. Ashton Graybill, M.D. Archives of Internal Medicine, Vol. 70, No. 2.

The authors select important contributions to the literature of 1941 on selected subjects.

Neurocirculatory asthenia. Wittkower, Rodger, and Wilson studied fifty soldiers with clear-cut effort syndrome. Thirty-five of these were manual laborers and at least twenty-nine had noticed symptoms in civil life. The patients were given both a cardiologic investigation and from a three- to six-hour psychologic review of their life history.

The leading symptoms were breathlessness followed in frequency by dizziness, cardiac pain, palpitation, headache, nervousness, sweating, tremor, etc. Cardiac symptoms were dyspnea, pain, palpitation on effort, occasionally at rest. As a result of the psychologic examination they detected a significant frequency of the following personality types:

Group 1.—A group of twenty with a keen sense of duty and a rigid deep morality. As children they were submissive and had an undue sense of guilt about minor relapses. They were poor leaders, not aggressive, poorly poised, had retarded sexual development, and were shy in the presence of girls. Seven of the twenty drank, only one excessively and many were religious.

Group 2.—Eleven were like group 1, but more aggressive. Most had unhappy childhood. Feeling of inferiority was often concealed with overambition or by a compensatory self-assertiveness. When faced with frustration, they tended to be resigned grousers rather than rebels.

Group 3.—Three in the number whose aggressiveness had arisen in childhood and had led to open rebellion had repeatedly been in trouble.

Group 4.—This group of twelve had inferior physique with emotional and instinctual immaturity. Eight of the twelve were unfit for games as children, and their feeling of inadequacy made them shy. They often failed in their occupations, and as soldiers they often broke down during training.

Group 5.—Four in number with a lack of sense of duty and described as quitters were physically and psychologically inferior.

As precipitating factors Wittkower listed emotional strain, thirty-four; physical strain, twenty-three; febrile illness, twenty-one; abuse of nicotine, five; accidental, four. The authors conclude that the only constant factor in determining the occurrence of effort syndrome is the pre-existence of a "character" disorder, and among the precipitating factors, emotional disturbances were the commonest. They caution relative to determining causative factors and stress their complex nature.

Studying 200 cases diagnosed as effort syndrome, Jones and Lewis paid particular attention to the mood and outlook and found seventy-six per cent had conscious fear accompanying their symptoms and seventy-two per cent had anxiety symptoms even at rest. Sixty-four per cent thought they had heart disease and fifty-three per cent were unduly preoccupied with their symptoms.

The authors state the mechanisms can be seen physiologically as those of the autonomic system and psychologically as those of the emotional sphere. In a discussion of external and internal causes, Jones and Lewis find that Army life itself was of less than expected significance. Other causes were exhaustion, infection, lack of sleep, separation from family and financial worries, etc. Remote external causes were psychologic trauma of childhood and parents with similar complaints. As to internal causes the authors found that soldiers with effort syndrome were not as a group more asthenic in build than average healthy soldiers, and they had a normal distribution of intelligence. A study of "function" revealed more, as fifty per cent had symptoms of a vegetative disorder as breathlessness, palpitation, excessive sweating or diarrhea on slight provocation of an emotional sort. Thirty-eight per cent found it impossible to wear a gas mask, forty-eight per cent never played games, and only twenty-five per cent had any athletic records.

Treatment consisted of graduated exercises, systematic occupations and psychotherapy. Prognosis was only fairly good. About twenty per cent were apparently cured and returned to full duty. Another twenty per cent were discharged from the Army as unfit. The remaining sixty per cent were returned for light duty and a follow-up study revealed that one-third did well, a quarter did moderately well, and the remainder had to be discharged as unfit.

Jones and Lewis agree with Wittkower and associates that effort syndrome is essentially a mental disorder, but it does not remove the possibility that a more adequate explanation for the symptomatology may be found.

P. Wood (British Medical Journal, 1: 767 and 806) approaches the problem of neurocirculatory asthenia from a somewhat different point of view than Wittkower et al. and Jones and Lewis, but had reached the same general conclusion after close personal contact with 300 patients. He does not believe the symptoms are an exaggerated manifestation of the normal responses to effort, but are somewhat similar to those produced in normal persons by some of the unpleasant emotions or in patients with psychoneurosis. Wood then reports his observations on the mechanism of the somatic manifestations and attempts to show that the chief symptoms are the result of a neurosis and not the expression of an abnormal physiologic response to effort.

As example of the approach to the study of the problem of precordial pain, the intercostal muscles were injected by procain with the abolition of pain in eleven patients. Wood concluded that the pain arises in local muscular or fibrous tissue. It may be due to fatigue or strain of certain muscular attachments or to incessant minimum trauma from the overacting heart.

Hyperventilation is believed to be emotional in origin and cannot be held responsible for the symptoms, neither by causing alkalosis nor by interfering with the circulation. The syndrome is thought to be produced by central stimulation and he attempts to show that the central stimulus is emotional and is commonly the result of fear. He states: "The reaction becomes linked to effort by a variety of devices, which include misinterpretation of emotional symptoms, certain vicious circular patterns, the growth of a conviction that the heart is to blame, consequent fear of sudden death on exertion, conditioning, and hysteria."

It is the opinion of the reviewer that Woods' paper is likely to stand out as one of the most important contributions on "effort syndrome"—a term he urges to be dropped.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Retinal Hemorrhage After Smoking Potato Leaves. Jean Sedan. American Journal of Ophthalmology, September, 1942.

Dried potato leaves are a not uncommon tobacco substitute in southern France. The author observed five precisely identical cases of retinal hemorrhage following the smoking of potato leaves. All were observed from eight to fifteen days after the beginning intoxication without evidence of any accompanying vascular or renal affection. The retinal hemorrhages were all in the form of fine flames, and in one of the patients there were also conjunctival hemorrhages. There were also the toxic and gastrointestinal symptoms common in inexperienced smokers. The effective poisons are solanin and solanidin. The author points out that there is retinal arterial hypertension after potato-leaf smoking, while tobacco produces hypotension.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Sulfathiazole in the Treatment of Measles and Its Complications. Harry Gibel, M.D., and Abraham M. Litvak, M.D., Brooklyn, New York. The Journal of Pediatrics, September, 1942.

At the Kingston Avenue Hospital the authors studied the value of sulfathiazole in the treatment of measles and the prevention of complications from the disease in the epidemic that began in December, 1940, and ended in June, 1941. All patients under six years of age admitted to the measles service were divided into two groups, 200 being treated with sulfathiazole and 201 being treated symptomatically and serving as controls. There was one exception. All cases with pneumonia on admission were given sulfathiazole. Those in the sulfathiazole group received one and one-half grains of the drug per pound of body weight per day for the first twenty-four hours, and one grain of the drug per pound per day until discharged.

In these patients sulfathiazole did not reduce the length of the primary pyrexia caused by measles and did not shorten the period of hospitalization. The drug did not shorten the duration of such complications as otitis media or of acute bronchitis present on admission. It did not prevent the development of complications, since in the drug-treated group eleven cases of otitis media developed as compared to four in the control group, and six patients taking sulfathiazole developed pneumonia, while none in the control group developed this complication.

The cases with bronchopneumonia responded promptly to sulfathiazole. In forty-seven patients with pneumonia there was one death, a mortality rate of 1.8 per cent. In previous years the mortality rate from measles with this complication varied between 14.6 per cent and 31.3 per cent in this hospital.

The authors conclude from this study that the routine use of sulfathiazole in all cases of measles is not warranted. The article is illustrated with numerous tables of statistics.

ROENTGENOLOGY

By J. Marsh Frere, M.D.
Newell and Newell Sanitarium, Chattanooga

Roentgen Manifestations of Adult Toxoplasmosis. L. R. Sante, M.D. American Journal of Roentgenology and Radium Therapy, Vol. 47, No. 6, p. 825, June, 1942.

Toxoplasmosis is a disease produced by toxoplasma, a protozoan of uncertain taxonomic status, usually classed with the sporozoa. Since 1908 it has been known to be pathogenic for animals, but only recently has its pathogenicity for man been discovered. At first it was found in newborn infants suffering from a peculiar meningoencephalitis.

The author describes the pulmonary lesions as manifested in the roentgenograms of two proved cases of toxoplasmosis in adults which were recently reported by Pinkerton and Henderson.

The earlier pulmonary manifestations may perhaps be best described as an appearance of acute pulmonary congestion with edema of the lungs; there is accentuation of the hilar shadows with an increase in the size and number of the lung markings radiating outward from the hilar regions into both lungs, but stopping short of the parenchymal structures. There is, in addition, the blotchy, blurred appearance seen in acute edema of the lungs. The picture, at this stage of the disease, is similar to that seen in passive congestion with pulmonary edema, but without cardiac enlargement.

At a more advanced stage of the disease the picture changes. The accentuated lung markings radiating outward into the lungs from the hilar regions are no longer the predominating features; they become overshadowed by the increasing interstitial infiltration and alveolar exudation. The composite picture is one of conglomerate areas of infiltration crowding upon each other to give the appearance of irregular, blotchy consolidation of the lungs. The site of greatest involvement seems to be the lower lobes. The roentgen picture at this stage, if considered without regard to the clinical manifestation, might be readily simulated by any of the atypical pneumonias, or by any of the mycotic infections. Extreme edema of the lungs from any other cause might be mistaken for this condition. Toxoplasmosis, however, is more acute and the symptoms are more grave. In both of the reported cases there was extreme prostration, high fever, and intense cyanosis and dyspnea toward the end of the disease and the patients died from respiratory failure. Clinical symptoms would easily rule out toxoplasma infection.

Essentially, then, the process seems to be an acute interstitial pneumonitis with associated pulmonary congestion and edema. The gelatinous appearing exudate almost devoid of inflammatory cells, the cuboidal alveolar epithelium, the thick hyaline membrane lining the alveoli, all are manifestations of what is found in influenzal or virus pneumonia.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

Upper Urinary Tract Lithiasis: A Frequent Complication of Urethral Stricture. R. L. Dourmashkin and A. A. Solomon. Journal of Urology, August, 1942.

Very little has been written, either in the textbooks or the literature, regarding the relationship between urethral strictures and urinary calculi. This is probably due to the frequency of the pus found in the urine of cases with stricture being attributed to the urethritis and not to upper urinary tract pathology, and also to the fact that routine X-ray examinations are not made in these cases.

Although the occurrence of urinary stasis and infection is well recognized in cases of lower urinary tract obstruction, many who treat urethral strictures are not sufficiently impressed with the frequency of the formation of upper urinary tract calculi.

One hundred thirty-six cases with urethral strictures form the basis of this study, eighty-four of whom had routine X-ray examinations of the urinary tract. Of these eighty-four, 22.6 per cent had calculi in the upper urinary tract. Thirty-four per cent of the X-rayed group had symptoms referable to the kidney. Six of the patients with stones and two with marked upper urinary tract pathology without stones had no renal symptoms.

Of the eighty-four cases, sixty-six were males and eighteen were females. In forty-nine there was a history of gonorrhea, in five there was a history of urinary tract trauma, three had had operation which caused the stricture, two had had strong chemical injections, one had a congenital stricture. In twenty-three no definite etiological factor could be obtained.

Only twenty-three patients knew they had a stricture; the rest were discovered on examination.

Of the group found to have stones, seventeen were men, two were women.

Other complications of the upper urinary tract, as hydronephrosis and pyelonephritis, were also found accompanying urethral stricture.

The importance of a complete urological examination in cases with urethral stricture is emphasized, as complications of the upper urinary tract may be present without renal symptoms.

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LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. J. B. Stanford, 899 Madison Avenue, Memphis.

President-Elect—Dr. O. N. Bryan, 2122 West End Avenue, Nashville.

Vice-President for West Tennessee—Dr. F. Douglas, Dyer.

Vice-President for Middle Tennessee—Dr. S. J. Fentress, Goodlettsville.

Vice-President for East Tennessee—Dr. B. L. Jacobs, Chattanooga.

Secretary-Editor—Dr. H. H. Shoulders.

Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville (1943).

Dr. E. R. Zemp, Walnut Street, Knoxville.

Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga (1944).

Dr. W. C. Chaney, 20 South Dunlap Street, Memphis (1945).

Dr. Hiram A. Laws, Jr., James Building, Chattanooga.

COUNCILORS

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Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. A. M. Patterson, Chattanooga.

Fourth District—Dr. J. T. Moore, Algood.

Fifth District—Dr. V. S. Campbell, Murfreesboro.

Sixth District—Dr. H. S. Shoulders, Nashville.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Eighth District—Dr. Geo. W. Brasher, Jackson.*

Ninth District—Dr. E. H. Baird, Dyersburg.

Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—
- Dr. E. G. Wood, Knoxville; East Tennessee (1945).
- Dr. H. B. Everett, Memphis; West Tennessee (1943).

Alternates—
- Dr. E. T. Newell, Chattanooga; East Tennessee (1945).
- Dr. E. C. Ellett, Memphis; West Tennessee (1943).

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*Deceased.

OFFICERS OF COUNTY MEDICAL SOCIETIES

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MORALE IS A LOT OF LITTLE THINGS

(*as you, Doctor, know better than most*)

There's Mary in her new Fall hat . . . looking young and like a bride again.

"Sa-a-ay!" Joe says, "You ought to be in pictures!"

And that's worth more than orchids—to Mary. That's one of the little things that make big differences to all of us.

Little things . . . nice trifles . . . simple pleasures . . . that make your good days better, help you through the bad ones. That's what keeps you smiling. That's morale.

★ ★ ★

It happens that millions of Americans attach a special value to their right to enjoy a refreshing glass of beer . . . in the company of good friends . . . with wholesome American food . . . as a beverage of moderation after a good day's work.

A small thing, surely—not of crucial importance to any of us.

And yet—morale is a lot of little things like this. Little things that help to lift the spirits . . . keep up the courage.

And, after all, aren't they among the things we fight for?

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USE OF SULFONAMIDES IN TREATMENT OF GONOCOCCIC CONJUNCTIVITIS*

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In a previous paper by one of us (P. M. L.),[1] making a comparison of sulfanilamide, sulfapyridine, and sulfathiazole in the treatment of 120 gonococcic conjunctivitis, the superiority of the sulfonamide compounds over presulfanilamide therapy was conclusively demonstrated. In this earlier series ninety cases were treated with sulfanilamide, twenty-two with sulfapyridine, and eight with sulfathiazole. The first patient with gonococcic ophthalmia was treated with one of the sulfonamides in June, 1937. All patients have received the benefit of chemotherapy since that time. To date, March 31, 1942, a total of 137 patients have been treated. No case is included in this series unless a gonococcic infection was definitely diagnosed both clinically and bacteriologically. Two smears were taken on admission and examined by different investigators. One smear was examined at the main bacteriological laboratory of the University of Tennessee and the other in the laboratory of the Isolation Hospital.

Until April 1, 1940, sulfanilamide was used in all cases. From April 1, 1940, to February 1, 1941, sulfapyridine only was used. From February 1, 1941, to June 1, 1941, sulfathiazole was employed in only eight cases. In this brief report we are including an additional seventeen cases treated with sulfathiazole from June, 1941, to March 31, 1942.

TREATMENT

The definite routine at the Isolation Hospital is as follows: on admission smears are taken for examination and, if the patient has the appearance of gonococcic infection, treatment with one of the sulfonamides is instituted at once. When sulfanilamide was used, an initial dose was given of one-third to one-half grain (.02 to .03 grams) per pound (454 grams) of body weight according to the severity of the case. For the newborn approximately one-half grain (.03 grams) per pound of body weight was given, and occasionally a slightly larger amount if the infection seemed unusually severe. A dose was given every four hours thereafter in an amount sufficient to give a daily dose of from one-half to one and one-fifth grains (.03 to .08 grams) per pound exclusive of the initial dose. Usually this dosage was continued five or six days until significant clinical improvement and negative smears indicated that the dosage might be reduced or stopped.

The doses of sulfapyridine are somewhat smaller; about one-third grain per pound for adults and a little less than one-half grain per pound for infants as the initial dose. The absorption of sulfapyridine is not nearly as definite as that of sulfanilamide. Thereafter the average requirement must meet the individual case. In adults the usual initial dose is thirty to sixty grains (two to four grams) and an average of about fifteen grains (one gram) every four hours thereafter. The improvement of cases treated in this manner has been so rapid that the above dose could be reduced or discontinued in from twenty-six hours to four days. In our experience it was unnecessary to continue sulfapyridine more than twenty-four hours after the condition was cured clinically and bacteriologically. There were no relapses with sulfapyridine.

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*Read before the Tennessee State Pediatric Society, Memphis, April 14, 1942.

†From the Departments of Ophthalmology and Contagious Diseases of the University of Tennessee.

Our experience with sulfathiazole as reported earlier included only eight cases. In this report an additional seventeen are added. The dosage used is approximately the same or slightly higher than that employed with sulfapyridine. Sulfathiazole is tolerated better than either sulfanilamide or sulfapyridine. However, the absorption and excretion are more rapid than with the other two. With the sulfathiazole-treated series the time required for a "cure" was slightly longer and the hospitalization slightly longer than with sulfapyridine. However, as the difference in time was almost negligible and as sulfapyridine was definitely more toxic, we concluded that the best drug for routine use at the present time is sulfathiazole.

In Table I is presented a detailed study of twenty-five cases of gonococcic conjunctivitis treated with sulfathiazole. The average time to effect a cure was 3.6 days, the average hospital stay averaged 5.9 days.

Unimpaired vision resulted in all cases. The smallest dose of sulfathiazole necessary to effect a "cure" was twenty grains and the largest dose 750 grains. There were no blood changes except one case which presented a slight leukopenia. The conjunctivitis complicated four cases of chronic gonorrheal urethritis and two of acute gonorrheal vaginitis.

Besides specific chemotherapy the following routine is carried out:

1. Mechanical cleansing of the conjunctival sac every two hours by irrigating with cool boric acid solution.
2. Instillation of five per cent sodium sulfathiazole solution every two hours.
3. Iced compresses in cases in which there is considerable edema of the eyelids and conjunctiva.
4. Discontinuance of this treatment as soon as the eye is clean clinically and the smears are negative. This occurs usually in from twenty-four to seventy-two hours. Following this, zinc sulfate, two grains (.13 grams) per ounce (30 cubic centimeters), is instilled three or four times a day and continued for about one week after the patient leaves the hospital.

Atropine is not used unless there is corneal involvement. No scarification of the conjunctiva, external canthotomy, or foreign protein injections have been necessary since sulfapyridine and sulfathiazole have been used. In a few cases in which sulfanilamide was given the response to treatment was poor, and therefore injections of milk or of typhoid vaccine were administered. The application of silver solution to the everted conjunctiva, which was formerly employed frequently, has been unnecessary since treatment with the sulfonamides has been employed.

REVIEW OF RESULTS

The success of any method of treatment of gonococcic ophthalmia should be judged by two standards:

1. The preservation of vision, which means the prevention of ulcers of the cornea, or the healing of ulceration which may have already occurred.
2. The rapidity and ease with which complete recovery occurs.

Obviously, the first standard is the more essential, but the second is of great importance both from the standpoint of shortening the patient's period of disability and from that of great economic saving. Prior to use of the sulfonamides, patients were confined to the hospital for a much greater length of time. They also required much more frequent attention; for example, irrigations every fifteen or thirty minutes

TABLE I
Sulfathiazole Treatment

Case	Age of Patient	Eye Involved	Duration Before Admission	Apparently Cured	Days in Hospital	Corneal Involvement	Visual Results	Total Dose of Sulfathiazole	Blood Changes, Remarks
1	21 Days	O. U.	4 Days	5 Days	7	None	Unimpaired	58 Grains	None
2	2 Years	O. U.	6 Days	4 Days	5	None	Unimpaired	85 Grains	None
3	15 Days	O. D.	4 Days	4 Days	8	None	Unimpaired	26 Grains	None
4	4 Years	O. D.	3 Days	3 Days	5	None	Unimpaired	188 Grains	None
5*	12 Days	O. U.	8 Days	9 Days	11	None	Unimpaired	64 Grains	None
6	20 Days	O. S.	2 Days	2 Days	3	None	Unimpaired	200 Grains	None
7	5 Days	O. D.	3 Days	3 Days	5	None	Unimpaired	23 Grains	None
8†	4 Days	O. U.	2 Days	2 Days	4	None	Unimpaired	85 Grains	Slight Leukopenia
9	12 Days	O. U.	4 Days	4 Days	5	None	Unimpaired	36 Grains	None
10	1½ Years	O. D.	4 Days	6 Days	6	None	Unimpaired	88 Grains	None
11	20 Years	O. D.	1 Day	6 Days	6	None	Unimpaired	570 Grains	None
12	20 Years	O. D.	1 Day	6 Days	7	None	Unimpaired	750 Grains	None
13	4 Years	O. S.	1 Day	4 Days	6	None	Unimpaired	176 Grains	None
14	9 Years	O. D.	3 Days	6 Days	8	None	Unimpaired	365 Grains	G. C. Vag.
15	23 Years	O. S.	4 Days	3 Days	5	None	Unimpaired	715 Grains	None
16	3 Years	O. D.	10 Days	2 Days	4	None	Unimpaired	89 Grains	None
17	4 Days	O. D.	1 Day	2 Days	7	None	Unimpaired	25 Grains	None
18	12 Years	O. U.	4 Days	3 Days	6	None	Unimpaired	440 Grains	G. C. Vag.
19	3 Days	O. D.	2 Days	2 Days	3	None	Unimpaired	32 Grains	None
20	23 Years	O. S.	7 Days	3 Days	7	None	Unimpaired	405 Grains	G. C. Ureth.
21	6 Days	O. U.	2 Days	1 Day	4	None	Unimpaired	20 Grains	None
22	20 Years	O. D.	14 Days	3 Days	12	None	Unimpaired	525 Grains	Chr. G.C.Ureth.
23	12 Days	O. S.	4 Days	3 Days	3	None	Unimpaired	25 Grains	None
24	3 Days	O. U.	1 Day	4 Days	7	None	Unimpaired	37 Grains	None
25	7 Weeks	O. D.	14 Days	3 Days	5	None	Unimpaired	40 Grains	None
Average				3.6 Days	5.9 Days				

*Not Cured after Eight Days' Treatment; Changed to Sulfapyridine; Well in Thirty-Six Hours.
†Sodium Sulfathiazole Five Per Cent Solution Instilled Every Two Hours; Severe Attack with Rapid Recovery.

day and night, as were commonly employed, frequently required the entire attention of one or more special nurses. Prolongation of this over two or more weeks, as was not uncommon, obviously was very expensive. Comparison of this with modern therapy by sulfapyridine or sulfathiazole, with which the patient requires very little local treatment and leaves the hospital fully recovered in less than seven days, shows the great superiority and the economic saving obtained by the latter method.

By inspection of Table II it is obvious that the use of sulfanilamide constitutes a distinct advance in the treatment of gonococcic infections of the eye from the point of view both of preservation of vision and of rapidity of cure. From the same points of view, it is apparent that treatment with sulfapyridine and sulfathiazole is far su-

TABLE II
COMPARISON OF RESULTS WITH AND WITHOUT SULFONAMIDES

	Number of Cases	Average Number of Days for Cure	Average Number of Days in Hospital	Unsatisfactory Results*
Presulfonamide Therapy	50	17.3	20.3	18†
Sulfanilamide	90	5.4	8.9	8‡
Sulfapyridine	22	2.57	4.85	0
Sulfathiazole	25	3.8	5.9	1¶

*Visual Damage from Corneal Ulceration Relapses and Very Slow Clinical and Bacteriologic Cures Are Placed Under This Heading.
†Corneal Ulceration, Eleven Cases; Delayed Recovery (over Three Weeks), Seven Cases.
‡Corneal Ulceration, One Case; Relapse, Two Cases; Delayed Recovery, Four Cases; Tolerated Drug Poorly, One Case.
¶Only Slightly Improved on Eighth Day; Changed to Sulfapyridine.

perior to that with sulfanilamide, the average number of days required for a cure being reduced to about one-half of the number necessary for sulfanilamide. The period of hospitalization was reduced to slightly more than one-half.

SUMMARY AND CONCLUSION

One hundred thirty-seven patients with gonococcic conjunctivitis were treated with sulfonamides.

Toxic reactions, with the exception of one case early in the series, were practically negligible. Nausea occurred frequently, especially with administration of sulfapyridine. Slight cyanosis was rather common. In very few cases were there any significant changes in the blood cell counts or in the hemoglobin.

There seems to be no contraindication to the systemic use of the sulfonamides except a definite history of previous intolerance to the drugs.

Sulfapyridine is amazingly effective in the treatment of gonoccic infections of the eye. Sulfathiazole has proven to be almost equally effective. Both are definitely superior to sulfanilamide. A cure may be expected within three days, as a rule, from the time treatment is begun.

Our limited experience with local treatment by the sulfonamides leads us to the conclusion that it does not compare favorably with the internal use of the drugs. The use of five per cent solution of sodium sulfathiazole instilled locally every two hours has proved to be of definite value.

Every patient with gonococcic conjunctivitis should immediately be given adequate systemic treatment with sulfathiazole, and as an adjunct the use of five per cent sodium sulfathiazole solution locally is recommended.

REFERENCE

1. Lewis, P. M.: "A Comparison of Sulfanilamide, Sulfapyridine, and Sulfathiazole in the Treatment of 120 Cases of Gonococcic Conjunctivitis." Journal of American Medical Association, Vol. 117: 250 (July 26), 1941.

THE RESULTS OF SEROLOGIC TESTS FOR SYPHILIS AMONG SELECTIVE SERVICE REGISTRANTS IN TENNESSEE[1]

The results of serologic tests for syphilis among the first 98,578 men examined in the Selective Service Program have been studied to learn the prevalence of syphilis among registrants in Tennessee and in the cities and counties of the state. Only the results of the first tests have been used, since additional tests have not been completed for all men found to have doubtful or positive tests. All reports received from the beginning of the program in November, 1940, to April 1, 1942, have been included. During a few months of this period, only registrants under twenty-eight years of age on July 1, 1942, were examined.

Of the 98,578 first specimens received 6,593 or 6.7 per cent were positive. In addition 837 tests were considered doubtful. Since many of these tests are followed by a negative repeat test, doubtful tests have not been included in the following data. The results of the serologic tests are given by color in Table I.

TABLE I
RESULTS OF SEROLOGIC TESTS FOR SYPHILIS FOR FIRST 98,578 MEN EXAMINED IN SELECTIVE SERVICE PROGRAM BY COLOR

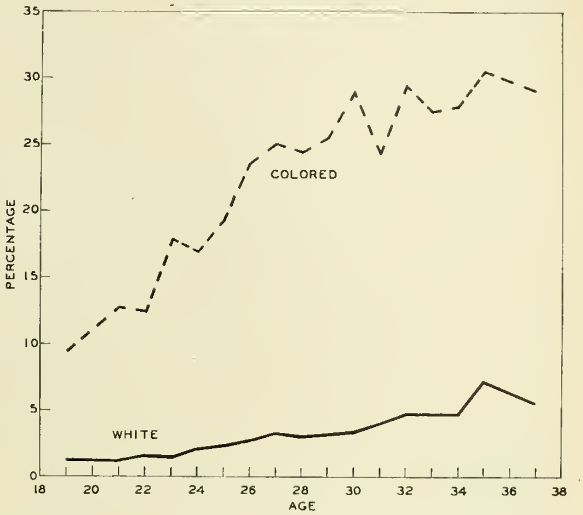
Color	Total Examined	Positive	
		Number	Per Cent
White	73,959	1,804	2.4
Colored	23,468	4,751	20.2
Unknown	1,151	38	3.3
Total	98,578	6,593	6.7

Two and four-tenths (2.4) per cent of the white and 20.2 per cent of the colored registrants examined were found to have positive blood tests.

These figures have been compared with those released by the United States Public Health Service for the first million registrants.[2] For the United States, 3.9 per cent of the registrants had positive serologic tests with 1.5 per cent for the white and 16.5 per cent for the colored. Thus the Tennessee rates are higher than the rates for the United States for both white and colored registrants.

The results of serologic tests have been studied according to the age of the registrants and the data are shown in Table II and Chart I for white and colored registrants.

CHART I
RESULTS OF FIRST SEROLOGIC TESTS FOR SYPHILIS FOR MEN EXAMINED IN SELECTIVE SERVICE PROGRAM—PERCENTAGE OF TESTS POSITIVE BY AGE AND COLOR



For the white registrants the rates increased from 1.1 per cent for those twenty-one years of age to 7.2 per cent for men thirty-five years of age. However, for colored registrants the rates were considerably higher and increased from 9.4 per cent for those under twenty-one years of age to 30.4 per cent for those thirty-five years of age.

The prevalence of syphilis is usually related to the size of community. For urban areas the rates are shown to be higher than in rural sections of the state.

In Table III the results of serologic tests are given for white and colored registrants examined for certain areas.

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[1] From files of Tennessee Department of Public Health. Material prepared by direction of W. C. Williams, M.D., Commissioner of Public Health, and Ruth R. Puffer, Director of Statistical Research.

[2] Results of Serological Blood Tests for Syphilis on Selective Service Registrants, U. S. P. H. S., with cooperation of Selective Service System.

TABLE II

RESULTS OF FIRST SEROLOGIC TESTS FOR SYPHILIS FOR MEN EXAMINED IN SELECTIVE SERVICE PROGRAM BY AGE AND COLOR

Age	White			Colored		
	Total	Positive		Total	Positive	
		Number	Per Cent		Number	Per Cent
Under 21 years	1,168	14	1.2	828	78	9.4
21 years	10,263	108	1.1	2,427	309	12.7
22 years	10,330	150	1.5	2,923	362	12.4
23 years	8,709	118	1.4	2,469	436	17.7
24 years	6,897	141	2.0	1,944	327	16.8
25 years	5,846	133	2.3	1,706	327	19.2
26 years	5,075	130	2.6	1,584	373	23.5
27 years	4,466	143	3.2	1,486	372	25.0
28 years	3,322	100	3.0	1,181	288	24.4
29 years	3,040	95	3.1	1,092	279	25.5
30 years	2,713	92	3.4	1,033	300	29.0
31 years	2,419	96	4.0	911	221	24.3
32 years	2,136	101	4.7	809	238	29.4
33 years	1,945	91	4.7	755	207	27.4
34 years	1,846	87	4.7	703	195	27.7
35 years	1,603	116	7.2	728	221	30.4
36 years and over	1,389	77	5.5	559	162	29.0
Unknown	792	12	1.5	330	56	17.0
Total	73,959	1,804	2.4	23,468	4,751	20.2

TABLE III

RESULTS OF FIRST SEROLOGIC TESTS FOR SYPHILIS FOR MEN EXAMINED IN SELECTIVE SERVICE PROGRAM FOR CERTAIN AREAS BY COLOR

	White			Colored		
	Total Examined	Positive		Total Examined	Positive	
		Number	Per Cent		Number	Per Cent
Cities of 100,000 and over	18,935	674	3.6	11,192	2,719	24.3
Chattanooga	3,286	172	5.2	1,717	517	30.1
Knoxville	3,610	110	3.0	929	163	17.5
Memphis	6,604	149	2.3	5,524	1,228	22.2
Nashville	5,435	243	4.5	3,022	811	26.8
Cities of 10,000 to 100,000	3,289	118	3.6	1,015	224	22.1
Cities of 2,500 to 10,000	7,486	227	3.0	2,584	541	20.9
Rural area	43,311	765	1.8	8,225	1,193	14.5
Unknown	938	20	2.1	452	74	16.4
Total State	73,959	1,804	2.4	23,468	4,751	20.2

For the four large cities with over 100,000 population, the white rates varied from 2.3 per cent in Memphis to 5.2 per cent in Chattanooga, while the colored rates varied from 17.5 per cent in Knoxville to 30.1 per cent in Chattanooga.

For white registrants, the rate for the cities with 10,000 to 100,000 population was the same as for the cities of over 100,000 population. However, the rates for the smaller cities and for the rural areas were lower. The rural colored rate was lower than the colored rates for the urban areas.

The data for the counties and for twelve cities of Tennessee are given in Table IV. The prevalence rates of positive serologic tests for white and colored registrants are shown in Charts II and III.

TABLE IV

RESULTS OF FIRST SEROLOGIC TESTS FOR SYPHILIS AMONG FIRST 98,578 REGISTRANTS IN SELECTIVE SERVICE PROGRAM FOR CITIES AND COUNTIES* OF TENNESSEE BY COLOR

County	Total			White			Colored			Color Unknown	
	Total Examined	Positive		Total Examined	Positive		Total Examined	Positive		Total Examined	Positive Number
		Number	Per Cent		Number	Per Cent		Number	Per Cent		
Anderson	617	22	3.6	585	16	2.7	29	6	20.7	3	------
Bedford	720	55	7.6	456	12	2.6	169	43	25.4	95	------
Benton	331	7	2.1	315	4	1.3	15	3	20.0	1	------
Bledsoe	306	7	2.3	280	4	1.4	25	3	12.0	1	------
Blount	1,176	36	3.1	1,061	22	2.1	106	14	13.2	9	------
Bradley*	987	32	3.2	865	24	2.8	110	8	7.3	12	------
Campbell	775	33	4.3	748	31	4.1	20	2	10.0	7	------
Cannon	241	2	0.8	225	------	------	13	2	15.4	3	------
Carroll	859	29	3.4	658	3	0.5	196	26	13.3	5	------
Carter	911	28	3.1	876	24	2.7	28	4	14.3	7	------
Cheatham	297	10	3.4	249	3	1.2	47	7	14.9	1	------
Chester	320	11	3.4	239	4	1.7	78	7	9.0	3	------
Claiborne	747	17	2.3	721	15	2.1	22	2	9.1	4	------
Clay	414	3	0.7	397	2	0.5	17	1	5.9	------	------
Cocke	839	33	3.9	783	29	3.7	48	4	8.3	8	------
Coffee	993	38	3.8	877	20	2.3	105	18	17.1	11	------
Crockett	575	30	5.2	443	6	1.4	129	24	18.6	3	------
Cumberland	461	9	2.0	459	9	2.0	------	------	------	2	------
Davidson*	10,377	1,207	11.6	6,564	284	4.3	3,585	914	25.5	228	9
Decatur	356	5	1.4	328	1	0.3	24	3	12.5	4	1
DeKalb	466	9	1.9	439	7	1.6	26	2	7.7	1	------
Dickson	607	27	4.4	481	7	1.5	114	20	17.5	12	------
Dyer*	783	30	3.8	672	15	2.2	105	15	14.3	6	------
Fayette	660	57	8.6	312	4	1.3	342	53	15.5	6	------
Fentress	411	12	2.9	407	12	2.9	------	------	------	4	------
Franklin	711	24	3.4	599	12	2.0	104	11	10.6	8	1
Gibson	1,531	77	5.0	1,088	9	0.8	415	67	16.1	28	1
Giles	1,029	41	4.0	799	16	2.0	227	25	11.0	3	------
Grainger	398	4	1.0	378	4	1.1	12	------	------	8	------
Greene	1,356	55	4.1	1,233	36	2.9	83	17	20.5	40	2
Grundy	317	3	0.9	307	3	1.0	2	------	†	8	------
Hamblen	812	48	5.9	688	33	4.8	107	15	14.0	17	------
Hamilton*	6,634	776	11.7	4,721	223	4.7	1,862	549	29.5	51	4
Hancock	161	3	1.9	153	3	2.0	5	------	†	3	------
Hardeman	930	52	5.6	454	------	------	464	51	11.0	12	1
Hardin	607	16	2.6	519	6	1.2	87	10	11.5	1	------
Hawkins	843	21	2.5	790	16	2.0	49	5	10.2	4	------
Haywood	1,100	153	13.9	399	8	2.0	696	144	20.7	5	1
Henderson	691	8	1.2	585	2	0.3	101	6	5.9	5	------
Henry	766	55	7.2	580	12	2.1	170	42	24.7	16	1
Hickman	511	3	0.6	461	2	0.4	45	1	2.2	5	------
Houston	201	7	3.5	174	4	2.3	25	3	12.0	2	------
Humphreys	374	8	2.1	310	3	1.0	53	5	9.4	11	------
Jackson	340	------	------	329	------	------	9	------	†	2	------
Jefferson	767	23	3.0	704	21	3.0	58	2	3.4	5	------
Johnson	314	5	1.6	290	3	1.0	17	2	11.8	7	------
Knox*	6,587	317	4,8	5,507	148	2.7	1,023	168	16.4	57	1
Lake	363	29	8.0	245	4	1.6	113	25	22.1	5	------
Lauderdale	897	66	7.4	542	9	1.7	353	57	16.1	2	------
Lawrence	735	24	3.3	688	15	2.2	45	9	20.0	2	------
Lewis	207	12	5.8	191	7	3.7	12	5	41.7	4	------
Lincoln	936	36	3.8	706	8	1.1	223	28	12.6	7	------
Loudon	695	20	2.9	653	16	2.5	36	4	11.1	6	------
Macon	446	7	1.6	421	5	1.2	18	2	11.1	7	------
McMinn	853	33	3.9	764	25	3.3	84	8	9.5	5	------
McNairy	453	11	2.4	393	7	1.8	58	4	6.9	2	------
Madison*	1,686	183	10.9	1,021	23	2.3	655	160	24.4	10	------
Marion	617	27	4.4	506	15	3.0	100	11	11.0	11	1
Marshall	563	21	3.7	437	6	1.4	115	14	12.2	11	1
Maury*	1,571	152	9.7	1,014	32	3.2	527	114	21.6	30	6
Meigs	186	2	1.1	165	1	0.6	20	1	5.0	1	------
Monroe	633	11	1.7	579	9	1.6	45	2	4.4	9	------
Montgomery*	1,058	66	6.2	679	13	1.9	350	53	15.1	29	------
Moore	146	1	0.7	130	------	------	16	1	6.2	------	------

*Inclusive of cities.

†Percentages have not been calculated when less than 10 men were examined.

TABLE IV—*(Continued)*

RESULTS OF FIRST SEROLOGIC TESTS FOR SYPHILIS AMONG FIRST 98,578 REGISTRANTS IN SELECTIVE SERVICE PROGRAM FOR CITIES AND COUNTIES* OF TENNESSEE BY COLOR

County	Total			White			Colored			Color Unknown	
	Total Examined	Positive		Total Examined	Positive		Total Examined	Positive		Total Examined	Positive Number
		Number	Per Cent		Number	Per Cent		Number	Per Cent		
Morgan	347	5	1.4	345	5	1.4	1	------	†	1	------
Obion	933	49	5.3	777	17	2.2	143	32	22.4	13	------
Overton	435	5	1.1	428	5	1.2	5	------	†	2	------
Perry	230	2	0.9	223	2	0.9	6	------	†	1	------
Pickett	223	4	1.8	219	4	1.8	------	------	------	4	------
Polk	478	12	2.5	474	10	2.1	3	2	†	1	------
Putnam	636	13	2.0	612	11	1.8	22	2	9.1	2	------
Rhea	501	23	4.6	461	16	3.5	39	7	17.9	1	------
Roane	787	25	3.2	684	10	1.5	92	15	16.3	11	------
Robertson	1,039	62	6.0	722	12	1.7	312	50	16.0	5	------
Rutherford	1,159	80	6.9	851	18	2.1	294	62	21.1	14	------
Scott	496	13	2.6	492	13	2.6	------	------	------	4	------
Sequatchie	216	1	0.5	215	1	0.5	------	------	------	1	------
Sevier	691	12	1.7	673	11	1.6	16	1	6.2	2	------
Shelby*	15,000	1,672	11.1	7,658	164	2.1	7,196	1,502	20.9	146	6
Smith	509	17	3.3	436	13	3.0	71	4	5.6	2	------
Stewart	384	8	2.1	358	7	2.0	25	1	4.0	1	------
Sullivan*	1,828	50	2.7	1,713	39	2.3	104	10	9.6	11	1
Sumner	841	33	3.9	681	7	1.0	148	26	17.6	12	------
Tipton	767	70	9.1	467	10	2.1	300	60	20.0	------	------
Trousdale	270	16	5.9	203	5	2.5	66	11	16.7	1	------
Unicoi	336	8	2.4	330	7	2.1	2	1	†	4	------
Union	302	2	0.7	300	2	0.7	------	------	------	2	------
Van Buren	133	6	4.5	125	4	3.2	8	2	†	------	------
Warren	630	31	4.9	534	9	1.7	91	22	24.2	5	------
Washington*	1,541	70	4.5	1,419	48	3.4	107	22	20.6	15	------
Wayne	496	19	3.8	455	3	0.7	41	16	39.0	------	------
Weakley	858	23	2 7	736	3	0.4	114	19	16.7	8	1
White	514	16	3.1	463	3	0.6	50	13	26.0	1	------
Williamson	870	47	5.4	579	11	1.9	289	36	12.5	2	------
Wilson	874	50	5.7	684	17	2.5	186	33	17.7	4	------
Total State	98,578	6,593	6.7	73,959	1,804	2.4	23,468	4,751	20.2	1,151	38
City											
Bristol	442	13	2.9	414	11	2.7	27	1	3.7	1	1
Chattanooga	5,040	693	13.8	3,286	172	5.2	1,717	517	30.1	37	4
Clarksville	396	45	11.4	195	7	3.6	194	38	19.6	7	------
Cleveland	513	25	4.9	424	17	4.0	83	8	9.6	6	------
Columbia	491	47	9.6	300	10	3.3	180	35	19.4	11	2
Dyersburg	224	15	6.7	169	8	4.7	53	7	13.2	2	------
Jackson	852	122	14.3	519	15	2.9	327	107	32.7	6	------
Johnson City	666	51	7.7	577	30	5.2	83	21	25.3	6	------
Kingsport	766	27	3.5	619	20	2.9	68	7	10.3	7	------
Knoxville	4,578	273	6.0	3,610	110	3.0	929	163	17.5	39	------
Memphis	12,208	1,378	11.3	6,604	149	2.3	5,524	1,228	22.2	80	1
Nashville	8,635	1,060	12.3	5,435	243	4.5	3,022	811	26.8	178	6

*Inclusive of cities.

†Percentages have not been calculated when less than 10 men were examined.

CHART II

RESULTS OF FIRST SEROLOGIC TESTS FOR SYPHILIS FOR 73,959 WHITE MEN EXAMINED IN SELECTIVE SERVICE PROGRAM—PERCENTAGE OF TESTS POSITIVE BY COUNTIES

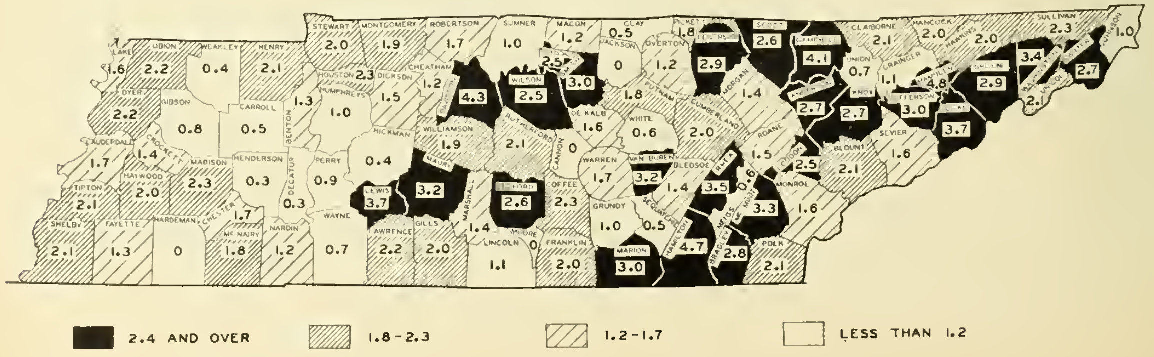
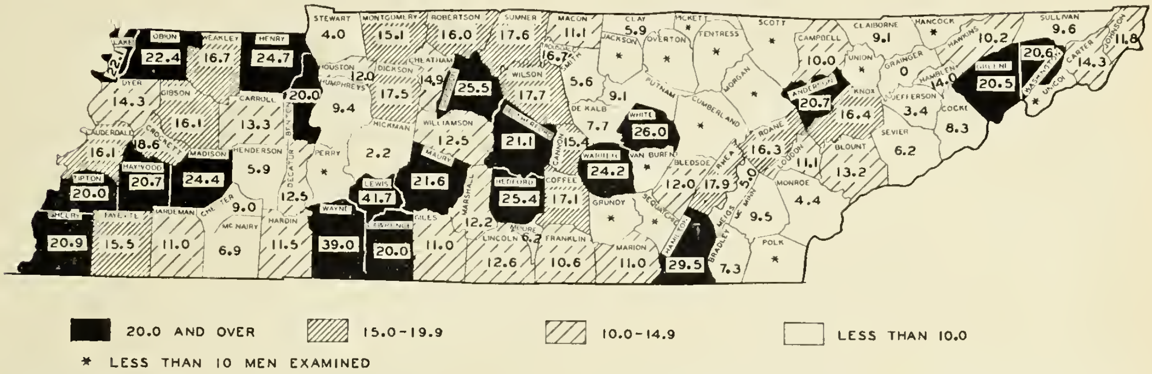


CHART III

RESULTS OF FIRST SEROLOGIC TESTS FOR SYPHILIS FOR 23,468 COLORED MEN EXAMINED IN SELECTIVE SERVICE PROGRAM—PERCENTAGE OF TESTS POSITIVE BY COUNTIES



Variations in the percentages for the white selectees are noteworthy. Evidently the disease has spread into certain areas, while in other areas the examined population seemed to be relatively free of the disease. Since the colored population was small in some of the counties, considerable variation in the colored group was due to the small number of men examined.

The results of the analysis are important in the administration of the venereal disease control program. In counties or cities with high rates emphasis on the treatment of infectious cases and prevention of the spread of the disease is of major importance.

In areas with venereal disease clinic service, the health officer or the clinic director is responsible for seeing that all registrants infected with syphilis are under treatment by their private physicians or by the clinic. Rehabilitation of all selectees infected with syphilis is important in this national emergency.

These findings represent incontrovertible facts affecting every community in the state. The necessity for complete cooperation among all physicians and public health departments in the diagnosis, reporting, treatment, and more adequate control of infectious cases of syphilis is of outstanding importance from now on.

CARCINOMA OF THE LUNG*

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The incidence of primary carcinoma of the lung is much higher than was realized a few decades ago, and it is much greater than is realized by many of us today. It is estimated that at least 15,000 persons die every year of cancer of the lung in the United States. Most of the recently-published autopsy statistics from large hospitals show a high incidence of primary cancer of the lung, and, in many of these reports, there is a yearly increase in ratio of this type of malignancy to carcinoma arising in other organs.[1, 2] It has been observed that the incidence of deaths caused by carcinoma of the lung per 100,000 population varied from .6 per cent in 1914 to 1.9 per cent in 1928.[3] Halpert[4] was able to show a relative, and absolute, increase in carcinoma of the lung in a survey of the autopsy material of the Charity Hospital at New Orleans during a ten-year period ending in 1940, and during the last three years, the number of autopsies performed on patients with carcinoma of the lung has exceeded those for carcinoma of the stomach. In attempting to explain the apparent absolute increase in the incidence of the disease, Ochsner and DeBakey have pointed out that this increase is rather closely proportionate to the increase in cigarette production and attribute to tobacco, as a carcinogenic agent, the probability of being an important etiologic factor in the occurrence of lung cancer.

It is apparent that a disease of such high incidence deserves serious consideration. Its effective treatment is dependent, like malignant disease in other parts of the body, upon early recognition of the lesion. Unfortunately, the onset of the disease is insidious in that it simulates mild respiratory inflammatory diseases which the patient, and often his physician, have been accustomed to treat lightly. Recognition of the growth in its early stages is accomplished then by keeping it constantly in mind as a possible cause of mild respiratory disturbances.

Sex Incidence.—Primary carcinoma of the lung occurs about four times more frequently in males than in females, although the incidence is apparently increasing in females.

Age Incidence.—The age incidence of carcinoma of the lung is about the same as for cancer arising elsewhere in the body. Most statistical studies show the greatest number of cases occurring between the ages of fifty and sixty, the vast majority of patients being past forty. Occasional occurrence is seen, however, in younger individuals, and about 3.5 per cent of patients with bronchiogenic carcinoma are less than thirty years old,[5] and about nineteen per cent occur below the age of forty.[6]

Symptoms.—Attention should again be directed to the mild and insidious character of the early symptoms. The subjective evidences of bronchiogenic carcinoma are dependent upon the site of origin of the growth and upon the degree of bronchial obstruction which it produces. When the tumor is of small size, there may be only irritation of the bronchial mucous membrane without obstruction, producing cough which is dry, or nonproductive. This cough may be attributed by the patient to smoking or, if a cold or other mild upper respiratory infection accompanies it or precedes it, the cough may be thought due to "flu" or to bronchitis. Cough is the most frequent early symptom, and a history of onset of "flu," followed by failure of disappearance of the cough, is common.

As the tumor grows larger and impinges upon or fills the bronchus, obstruction occurs, so that normal drainage of secretions is interfered with, and the cough becomes productive of a mucoid type of sputum. The patient sometimes complains of unilateral wheezing. Infection of the wall of the bronchus follows this obstruction, and the sputum becomes purulent. Bleeding may occur from areas of ulceration on the surface of the tumor or in the wall of the bronchus, and hemoptysis occurs. This may occur very early, and occasionally it is the first symptom.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

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Coincident with the development of these symptoms, and occasionally occurring without other evidences of the disorder, there is often a vague feeling of discomfort in one side of the chest which is indefinite and which may be intermittent. The occurrence of dyspnea is usually late in the disease and may be due to massive atelectasis or to the accumulation of fluid in the pleural cavity. Weight loss, weakness, anorexia, and night sweats also occur as late manifestations of the disease.

Fever frequently occurs in bronchial obstruction due to carcinoma, and this often leads to confusion in diagnosis. Many cases have been sent to tuberculosis hospitals as having pulmonary tuberculosis.

Pressure symptoms occur particularly in superior sulcus tumors, and they are manifested by dilated veins in the upper part of the chest and neck due to pressure on the superior vena cava. Hoarseness also sometimes develops because these tumors interfere with the recurrent laryngeal nerve on the left side.

It should be realized that there are no clear-cut characteristic symptoms of early carcinoma of the lung. Any patient past the age of forty who has respiratory symptoms not readily explainable by the usual methods should be investigated thoroughly in an attempt to exclude the possibility of bronchiogenic tumor. Treatment is only effective in the early stages of the disease, and by keeping the condition constantly in mind an increasingly larger number of patients with early primary lung cancer will be discovered.

Physical Signs.—There are no characteristic signs to be found on physical examination which lead to the diagnosis of malignant disease of the lung. Slight inspiratory lag, dullness to percussion, and suppression of breath sounds may indicate an area of atelectasis. Elevation of the diaphragm, displacement of the trachea and heart toward the affected side, and wheezing also are present in many cases. The presence of fluid in the pleural cavity is easily detectable and usually means that extension of the growth to the pleural surfaces has occurred, but this is not always true, and there are recorded cases of pneumonectomy for bronchiogenic carcinoma in which pleural effusion was present, and in which there was no evidence of extension of the disease beyond the limits of the lung. Evidence of extension of the process to distant areas, as the liver, brain, or to the cervical region, are of prognostic value only since they indicate inoperability.

Roentgen Ray Examination.—The X-ray examination may fall into any of the following four types:

1. Those in which the shadow of the growth is plainly discernible and the phenomena associated with bronchial obstruction are absent or subordinate.
2. Those in which the growth is too small to cast a discernible shadow, but manifests itself by the phenomena associated with obstruction of a bronchus, i. e., atelectasis or bronchiectasis, etc.
3. Those in which both the tumor and the complicating phenomena are discernible, but the latter dominates the picture to conceal, at least in part, the primary tumor.
4. Those early cases in which no definite abnormalities are demonstrable by roentgen ray examination. Such cases are rarely encountered.

Many tumors may not be visible on the routine posterior-anterior exposure of the film because of their location in such an area that they are overshadowed by mediastinal structures.

Lateral or oblique exposures should be made if the tumor is suspected and is not seen in the ordinary chest plate. Fluroscopic examination is very helpful in these cases, even where the presence of the mass has already been determined. The patient should be turned from side to side, the examination should proceed slowly, and the identification of the normal thoracic structures noted carefully.

The majority of the lesions arise in the larger bronchi, so that the mass may appear to be continuous with the mediastinal shadow and may often be thought to be a mediastinal tumor. It should always be remembered, however, that bronchiogenic carcinoma is far more common than are neoplasms arising from other mediastinal structures.

The use of body section radiography, as with the laminagraph described by Moore, may give a much clearer picture of the lesion itself by the dispersion of overlying and underlying shadows, leaving the selected layer in the body, which is occupied by the tumor mass, relatively unobstructed. This method of examination employs the principle of coordinated movement of both the X-ray film and the tube during exposure, a predetermined area in the body remaining stationary, at the level of the fulcrum, upon which the tube and film rotate, and in its position on the film.

Bronchograms.—Bronchograms, obtained by the injection of radio-opaque oils into the bronchial tree in the suspected area, will sometimes reveal the presence of the tumor or bronchial obstruction and the secondary bronchiectasis.

Bronchoscopy.—Bronchoscopic examination should always be performed when bronchiogenic carcinoma is suspected. It must be remembered that not more than seventy-five per cent of correct diagnoses can be made by this procedure when carcinoma is present, and that in most clinics this figure is too high.[7] The failure of the bronchoscopist to find a tumor, or to remove tissue for examination, does not exclude the possibility of bronchiogenic carcinoma. Likewise, the removal of normal tissue by biopsy does not mean that carcinoma is not present. Tumors which are located near the periphery of the lung, or in the upper lobes, may not be seen with the bronchoscope, and, consideration of a "negative" bronchoscopic examination, or biopsy report, as evidence against the presence of carcinoma is, therefore, incorrect and may deprive a patient of his chance of cure of the cancer.

Where evidence of the presence of the tumor is apparent, the following information is sought by the bronchoscopist:[8]

1. A study of the general character of the lesion.
2. The location of the tumor and its extent along the bronchial walls.
3. The securing of tissue for biopsy if possible.
4. The notation of evidences of inoperability of the lesion, i. e., extension of the tumor along the bronchial wall to the trachea, or the fixation, or widening of the carina, or trachea, indicating involvement of lymph nodes at the carina and about the trachea.
5. The presence of blood or pus in the lumen.

Other methods of diagnosis include biopsy by the use of needle puncture through the chest wall. We feel that this method of examination should not be used. The traversion of lung tissue with the needle is dangerous, particularly if the pleural surfaces are free. The possibility of implantation of tumor in the chest wall or pleural space, the dangers of air embolism and of hemorrhage, and the uncertainty of the procedure itself in the establishment of a large proportion of positive diagnoses,[9] make us believe that it should not be practiced. There is considerable disagreement at this time, however, concerning the safety and the efficacy of this procedure.

Occasionally pieces of tumor tissue will be coughed up by the patient, and if they are looked for in the sputum will reveal the correct diagnosis when examined microscopically. Recently a patient in the Vanderbilt University Hospital coughed up a large bronchial cast, which on section was found to be almost entirely composed of squamous cell carcinoma.

Exploration of the thorax is always justified both to gain evidence of the presence of a tumor in the lung and to determine whether or not a tumor is operable. The opening of the pleural cavity is no more dangerous in the hands of a competent surgeon and anesthetist than is exploration of the abdomen.

Pathology—It is now agreed among most investigators who have been interested in malignancies of the lung that practically all carcinomas of the lung are bronchiogenic in origin and that cancer probably never arises in the alveoli.

There are four types of epithelial cells which make up the lining of the normal bronchus: the basal cell, the intermediate or "indeterminate" cell which lies adjacent to the basal layer, and the ciliated columnar lining cells through which are interspersed goblet cells which secrete a mucous fluid into the lumen of the bronchus.

The intermediate cells, which may be actually a part of the basal layer, are small, have a rounded base, and a tapering point which often extends outward between the columnar cells which line the bronchus. Because of its shape it has been called an "oat-cell." From it are supposed to arise the adult ciliated columnar and goblet cells.

The microscopic classification which has been most frequently used in bronchiogenic carcinoma is: squamous cell carcinoma, adenocarcinoma, and undifferentiated, small-cell or oat-cell carcinoma. Many authors believe that all such tumors arise from the intermediate or basal cells (the "reserve cell" of Halpert), and that varying degrees of metaplasia result in the various histological pictures encountered. Other workers, notably Graham and his associates, believe that many of these growths are in reality mixed tumors.

Approximately fifty-eight per cent of bronchiogenic carcinoma arises in the right lung and forty-two per cent in the left. The majority of lesions occur near the hilum, though occasionally they may arise in small bronchioles near the periphery. The latter are more apt to be adenocarcinoma. Bronchiogenic carcinoma may extend to regions beyond the lung by direct extension, by way of the lymphatics, by metastasis through the blood stream, or possibly as air-borne emboli through the bronchi to other portions of the lung or the contralateral lung. The importance of lymphatic spread is seen in the large number of cases of peribronchial and mediastinal lymph node involvement in cases which have been observed during the last decade. Statistics gathered from autopsy as well as operative material show involvement of these nodes in more than seventy per cent of cases. Extension to the liver occurs in approximately thirty per cent of cases, and lymphatic vessels from the liver have been shown to traverse the diaphragm to connect with intrathoracic lymph nodes. Connections between these lymphatic vessels and those of the kidney and adrenals are also often present, and extension to these organs is not uncommon.

Metastasis through the blood stream, following invasion of pulmonary vessels by neoplasm, may occur in any part of the body. The bones, brain, and again the liver, kidneys, and adrenals appear to be the most frequent sites of hematogenous metastasis. The pancreas, peritoneum, skin, spleen, and indeed any region of the body may be the site of such extension.

Tuttle and Womack[10] have observed that particulate matter injected into the periphery of the lungs of animals spreads to lymph nodes much more rapidly than when injected into the wall of a major bronchus. They then found at autopsy that in those patients whose first symptoms were from metastatic lesions rather than from the lung, the tumor was located near the periphery of the lung and was usually small. They also found that the duration of life was about two and one-half times as long with tumors which were bronchoscopically visible than with those which could not be seen with the bronchoscope.

Many authors, notably Koletsky,[11] Tuttle and Womack,[10] and Gebauer,[12] have been able to show a difference in the tendency to metastasize, depending upon the cell type. The small-cell carcinoma appears to be highly malignant and to metastasize early, whereas the squamous cell carcinoma grows more slowly and metastasis appears to occur later. Also the adenocarcinoma grows more rapidly and metastasizes earlier than does the squamous cell carcinoma.

Treatment. — Pneumonectomy was first suggested by Truc in 1881, but the operation was not performed on a human until 1910. This was done by Kummel, and his patient died six days after operation. The first successful pneumonectomy was performed by Nissen in 1931 for bronchiectasis, and in 1933 Graham reported the successful resection of a lung for cancer. His patient was a physician, who is still living and well. Since then the list of successful operations has grown steadily and, with the accumulation of knowledge of the frequency with which primary cancer of the lung is encountered, interest in the surgical treatment of the condition has grown rapidly and has become widespread. Improvements in anesthesia and in operative technic have contributed to a progressive lowering of the operative mortality rate.

It is not the purpose of this paper to discuss the technical procedures involved in pneumonectomy, but rather to insist that this procedure offers the patient, with carcinoma of the lung, his *only* chance for cure. It is now generally agreed among surgeons, and among most radiologists, that radiation therapy is useful only as a palliative measure. The lives of some individuals have apparently been prolonged, but differences in rate of growth of various tumors make such observations uncertain. The duration of life in patients not operated upon, or treated by radiation, varies from a few weeks to about three years, and during a large part of this time many patients are in distress. Although the pathological characteristics of bronchiogenic carcinoma differ, in many aspects, from cancer arising in other organs, cure of the lesion must be accomplished simply by complete excision of the tumor.

The operative mortality rate in pneumonectomy was well over fifty per cent in various clinics a few years ago. More recent reports show it to have been lowered from thirty-five per cent in some clinics to twenty-five per cent in others.[13] These figures are not high when one remembers that the disease is always fatal when pneumonectomy is not performed.

Resection of the stomach for cancer has for several decades been an accepted procedure. The results of this procedure, which in itself is a formidable one requiring considerable skill, are discouraging in terms of cure of the lesion. There are, on the other hand, at this time, several recorded cases of patients cured of carcinoma of the lung, for five years or longer, by pneumonectomy, and on this basis we feel it reasonable to view, with optimism, the problem of the treatment of bronchiogenic carcinoma. Its success will depend upon the alertness of the medical profession in the detection of malignant disease during its early stages.

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DISCUSSION

DR. H. S. SHOULDERS (Nashville): Mr. Chairman, I cannot disagree with anything that has been said in this paper. I had the opportunity of reading this paper. The only doubt in my mind is the mortality statistics. You know, it is said that we have lies, damned lies, and statistics. Most of the cases that I have seen with a pneumonectomy have died. I hope that Doctor Johnson and Doctor Daniel are correct. Otherwise, I cannot disagree with anything.

For the past three years or a little bit more I have been very much interested in the combined treatment of fever therapy plus X-ray therapy, and at this point I want to briefly report a case.

The patient came to us from the state of Indiana. A large tumor was present. He had had a bronchoscopic examination with a biopsy. This patient had a definite bronchiogenic carcinoma. I am sorry to tell you that this patient died after eight months' treatment. But we think we got some information from this.

The patient had a massive collapse; he had a complete blocking of the lower bronchus when we first saw him.

After fever and X-ray therapy, the tumor was reduced in size, and I am sorry to say at autopsy the patient had a very definite general metastasis even to the suprarenal glands, but the tumor in the lung had been reduced in size and only a few malignant cells were found. I feel that the patient died of metastasis. He probably had metastasis before we saw him, and, of course, we were taking a chance and we knew it, and we told the family that we were doing so in treating him at all. The case was purely an experimental one.

I am not going to disagree with anything that is in the paper, but I want to impress upon you the importance of more frequent bronchoscopic examination, more frequent oil injection, although we did not carry out this procedure because when he came to us he had a very definite diagnosis already. We do feel that we have a treatment that has some promise, but we have not had enough of these particular cases to give us any definite idea of its final value. We realize it will take many years of experimental work before definite conclusions can be reached. In our series of 125 cases of various types of malignancy treated by fever and X-ray, every case has been considered by the tumor clinic to be inoperable and incurable before treatment. But in some of these cases, our work has been so satisfactory that we have been encouraged to continue the experimental treatment.

DR. J. E. WHITELEATHER (Memphis): Mr. President and Members of the Association: I think that Doctor Johnson and Doctor Daniel have made a most interesting paper out of what, to a general medical practitioner, would be a very tiresome subject. Cancer of the lung is something that we radiologists have to deal with a great deal, and unfortunately we do not always deal with it perfectly.

The tumor process is most frequently obscured by considerable secondary infection, atelectasis, hemorrhage, and other processes that follow the pathological changes due to the growth of the tumor, so that the diagnosis becomes very hard, and yet it is important to make it early, because, as Doctor Johnson pointed out, the early diagnosis permits an early exploration and operation and removal of the lung, if possible.

From the radiological standpoint, there are two aspects of the problem that I can touch upon. The first is therapy with X-ray. Doctor Johnson stated that the result from X-ray therapy has been very discouraging. However, it cannot be dismissed quite so easily since it does have some value. Quite frequently a tumor will appear large and bulky on the first examination and will seem to be, most certainly, inoperable. If it is irradiated, it may decrease in size and the surrounding infiltration may subside sufficiently that a better radiographic study can be made; it may then be found to be operable.

The sensitivity of various tumors varies considerably, and a therapeutic test may often help in differentiation. Doctor Johnson's main contention, however, is still true, and that is that probably no tumors are cured by X-ray. Nevertheless, the patient is often greatly relieved of respiratory difficulty, pleural effusions sometimes occur more slowly or may be even stopped. Pain from pleural metastases may subside and harassing coughs may cease.

Second Radiographic Diagnosis.—In addition to the standard radiographic procedures of which Doctor Johnson has already spoken is laminagraphy, on which he merely touched. I want to take this occasion to show you some of this work. Two of these cases were patients of Doctor Carr's here at Memphis, and were seen at the Baptist Hospital. There was, I think, no doubt in any case, but that there was a new growth in the lung, and so I cannot say the procedure made the diagnosis, though it certainly aided, along with bronchoscopic examination and other roentgen findings.

The laminagraph, as Doctor Johnson stated, is an apparatus, which, by mechanical means, smears out all structures except at one level, which level can be selected by regulating a fulcrum. We have had this machine only a short period of time, and we have not studied a great many cases.

This is an ordinary chest film which shows some infiltration at the right base. You see the usual secondary pneumonic changes.

This mass became visible in the laminagram made at about eleven centimeters depth. You can actually see some narrowing of a bronchus at this point. We felt the tumor probably arose from a bronchus, almost obliterating it at this point.

This is another patient presenting very much the same findings on the X-ray, which shows some atelectasis and a dense shadow at this point.

Here can be seen a mass with a compression of the bronchus at this point.

One of these films at different depths shows involvement of the mediastinal pleura and also the parietal pleura at the periphery of the lung. We feel that it is of considerable assistance to the surgeon, since, in this case, we know the patient was absolutely inoperable.

This next case was not a malignancy, and Doctor Johnson may excuse me for getting into something else, but there was a complete atelectasis of this lobe, as you can see, and the patient complained of respiratory symptoms.

The laminagram shows the trachea with the displacement here, and complete block where the arrow points. It is a round, circular shadow, and we felt was probably a nonmalignant polyp since this patient was a young lady. Doctor Carr bronchoscoped the patient and found a polyp there, which was later removed, with recovery of the patient.

Doctor Johnson touched on superior sulcus tumors, which are very interesting and which do have perhaps a more definite clinical symptom than ordinary bronchiogenic tumors. These tumors, as he stated, sometimes cause obstructive symptoms in the chest with dilatation of the superficial and deep veins. However, those that we have seen recently have presented a slightly different picture.

There has been a production of so-called Horner's syndrome with a reduction or decrease of sweating of one-half of the face and upper thorax. The test to determine this is very simple and calls for spreading iodine and starch over the affected area. The patient is put under a blanket so that perspiration results. The side that perspires will be discolored blue. The side that does not will not be affected. These patients also complain of intense pain in the chest wall and forearm, which is due to involvement of the nerve trunks in the supraclavicular space. These symptoms can be reduced somewhat by X-ray therapy.

DR. DAVID H. WATERMAN (Knoxville): I have a single slide here that I thought might serve to emphasize some of the points in diagnosis of bronchiogenic carcinoma, and if I may impose upon you for just a moment, I will show it. It may help to explain what Doctor Johnson has so beautifully brought out in his paper.

As the tumor grows bigger, the symptoms change. When the tumor is small, it produces only irritation, and there is a dry, unproductive cough; as it becomes larger, it produces partial obstruction, and there is increase in secretion in the bronchus and mucoid sputum. With increased size it may also ulcerate and bleed, producing the symptom of hemoptysis. As it grows still larger and closes off the bronchus, there is secondary infection with purulent sputum, chills and fever, atelectasis, and dyspnea. After metastasis has occurred, pain, hoarseness, pleural effusion, and lymphatic enlargement may result.

DR. D. M. CARR (Memphis): Mr. Chairman and Members of the Society: I would like to take one moment to emphasize two points in connection with carcinoma of the bronchus. The first is the effectiveness of X-ray therapy on these tumors. I stand rather in the middle of the road. I had an opportunity, when our friend, Dr. Wm. Bethea, was still in Memphis to bronchoscope periodically and regularly a few patients he was treating intensively, and I do mean intensively, with deep X-ray therapy. There was a definite regression in the amount of edema in the bronchus, a definite diminution of the infection surrounding the tumor, but the actual carcinoma itself decreased not at all. All these patients were, of course, inoperable. They were relieved of symptoms, and as palliative treatment it was most useful, but they went the way of all flesh. I am inclined to agree with Doctor Shoulders that the majority of our bronchial carcinoma patients still die. In our small group we have the opportunity of seeing something over 100 carcinomas of the bronchus a year. Only seven of those ever have been explored because they reached us in an obviously inoperable condition. That emphasizes the need of suspecting carcinoma in the patient of forty or above who develops asthma or wheezing, or who has blood-streaked sputum, or who develops for the first time in his life a cigarette cough. If those patients are bronchoscoped, a number of them will be discovered to have carcinoma before atelectasis sets in.

The last thing I should like to mention is that I am quite sure that Doctor Johnson would not wish to take away credit where credit is due, but the first successful total pneumonectomy in this country was not that of Doctor Graham, but that of Dr. Cameron Haight of Ann Arbor, Mich., in November, 1932, preceding Doctor Graham's case of April, 1933. I know this for a fact because I performed the thoracoplasty on the girl myself, I assisted Doctor Haight in freeing the lung, and I lifted out the lung personally, so I know there is no mistake in the statement.

DR. HOLLIS E. JOHNSON (closing): First I want to thank the gentlemen for their generous discussion.

With regard to Doctor Shoulders' doubting the statistics, I want to say that the statistics are not ours. We have not had enough experience to have any. We were only quoting someone else's statistics, and we will be glad to let him see the source of our statement.

Doctor Shoulders also suggested the very interesting subject of fever therapy, together with X-ray therapy in the treatment of malignancies, and I think his result in his patient certainly is enough to encourage him and his coworkers to do some more of it. I think the fact that post-mortem examination showed disappearance of cancer cells from the region of the cancer is most interesting and should indicate further work with their method.

Doctor Whiteleather pointed out the benefit of X-ray in reducing the tumor, causing it to shrink in size and causing its easier extirpation, and I want to thank him for that suggestion.

We have seen only one superior sulcus tumor, but we did not observe the phenomenon that he mentioned, and I want to thank him for bringing that to our attention also, and further for the demonstration of laminagrams.

I think also Doctor Whiteleather's case with the bronchial polyp illustrates the absolute necessity of bronchoscopic examinations in these patients.

Doctor Waterman's summary of the symptomatology of bronchiogenic carcinoma has been most helpful, and I appreciate that very much.

Doctor Carr emphasized two important points when he said that we should suspect a bronchial tumor in a person over forty who has wheezing and the other symptoms we have stressed today, and the necessity of subjecting such a person to bronchoscopic examination and the other examinations that we have suggested.

My face is somewhat red over his reminding me that Dr. Cameron Haight was the first man to do a successful pneumonectomy. As a matter of fact, I think I knew that, and I am sorry that I had to be reminded by Doctor Carr.

ANORECTAL FISTULA*

J. M. STOCKMAN, M.D., Knoxville

Anorectal fistula may be described as a pathological tract originating in or near an anal crypt and extending into, or through, the surrounding tissue. The tract may or may not have a secondary opening in the perianal skin, and if there is a secondary opening into an adjacent organ, it is so classified, as, for instance, a recto-vaginal fistula. It may be stated, safely, that all fistulae in this region originate from a pyogenic process, and this process almost invariably originates at the mucocutaneous junction of the anorectal region. Here the mucous membrane is thrown into folds, called the columns of Morgagni, and in the depth or bases of these folds, overhung by the skin of the anal canal, are located the anal crypts. Many authors have described both the anatomical structure and function of these crypts, but Tucker, notably, states that a glandular structure empties into the mouth of the crypts and its distal portion is branching and traverses portions of the external sphincter. Pope described a true acinar structure. Their function is to lubricate the mucous membrane of the rectum.

With this brief introduction, I believe that we can readily see why a pyogenic process located in one of these crypts can and does result in an abscess outside the anal sphincters. This abscess is merely the first stage of a fistula formation, as a fistula tract is merely the contraction of the pyogenic capsule of the abscess. A fistula drains pus because the internal, or primary, opening is inside the anus, and is therefore subjected to continuous infection, as well as to the daily trauma caused by a bowel evacuation. To eradicate a fistula various methods have been devised, but by even a superficial analysis one may readily see that they all have to do with an obliteration of the tract itself.

In dealing with an anorectal fistula, one cardinal rule must be always in your mind —the isolation and eradication of the internal opening, which is the true source of the tract. This may be classed as the spring which gives rise to the brook. No matter how much work is done on the "brook" or tract, the spring persists unless some radical means is used.

Simple Complete Fistulae

This type of fistula is the most common and easiest to treat, and, consequently, is the subject for the more bizarre methods. It usually has its internal opening in a posterior anal crypt, with an external, or secondary, opening immediately opposite, located within an inch or so of the anal margin. The tract is straight and not tortuous, but possibly may have a slight bend to either side away from the posterior commissure.

1. *Use of Pastes and Caustics.*—Beck's Bismuth Paste has been used to inject into these tracts for the purpose of literally stuffing them so full that no infectious process can get in. The advocates of this type of treatment state that the tract is first sterilized by an antiseptic, and then the sterile bismuth paste is injected through the external opening. The paste is inert and therefore offers no culture media for bacteria, nor does it permit their entrance. How anyone can sterilize the tract connected with the rectum is beyond my conception. How any inert material can prevent the multiplication of bacteria on an already pyogenic membrane is equally astounding. As for the various caustics, one that is effective must be able to cause an obliteration of the internal opening and completely stop its contamination of the tract, as well as sufficiently cauterize the wall so that it, too, will become inactive and a simple scar thread result. Such a one that will eat out the tract and stop there without damaging the adjacent integument has not been invented, to my knowledge. Iodines, potassium permanganate, lipiodol, copper sulfate crystals, sulfuric acid, and various ointments producing similar activity have been tried. I merely mention these to condemn. They are not surgical, but, on the contrary, can be of distinct harm in aiding the infectious process to spread beyond its already well-formed fibrous capsule.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

2. *The Use of Constricting Ligatures.*—This method was devised because some people are very adverse to any operative procedure at all. It is entirely possible to effect a cure by passing a length of heavy braided silk, silkworm gut, or heavy rubber band through the tract and tying it tightly so as to ulcerate through the intervening tissue, but the pain is almost intolerable to so sensitive a tissue.

3. *The Use of Anal Dilatation.*—This, too, is just another method to be condemned, as the only way one could obtain a cure would be by rupturing entirely through into the tract, and, if this is to be done, why not a controlled rupture or a clean incision with a sharp scalpel?

4. *Surgery.*—There is only one way of treating a fistula, and that is by some surgical procedure, one that has for its purpose the isolation and eradication of the entire tract and primary opening, as well as the secondary opening, if present. No less will suffice. It is true of the more superficial types that they may merely be opened, or a fistulatomy done on them, and they will heal. We prefer to pass a silver wire probe through the tract after the surrounding integument is blocked off with a local infiltration of one-half to one per cent novocain solution and the intervening tissue incised.

Those simple complete fistulae deep enough to necessitate a rather extensive infiltration to obtain anesthesia are best hospitalized. It must be remembered that we are dealing with a chronic infected sinus, and to introduce a local anesthetic adjacent to such has its danger of spreading the process. Too, the jabbing of needles through the skin of the perianal space is, to say the least, painful.

Our patients are hospitalized the night before, a barbiturate is administered for sleeping purposes, and early the next morning a soda enema is given, early enough to allow two hours to completely evacuate the solution. One hour before operation, we give nembutal (grains three) and morphine sulphate (grain one-fourth). The patient is not shaved because when the hair grows back the bristles both irritate and, at times, cause a rather severe pruritis. At operation, we prefer to give some type of nerve block anesthesia, either a caudal anesthetic, thirty cubic centimeters of a one per cent metycaine solution, or seventy-five milligrams of novocain crystals intraspinally. For those fistula cases who demand an inhalant anesthetic, this type is used, but care should be used in isolating and refusing to permit an inhalant anesthetic to a patient who has, or has had, previous pulmonary tuberculosis infection. It is not the fistulectomy that causes a recurrence of the pulmonary pathology, but the anesthetic. A fistulectomy of a tubercular fistula enhances the recovery by removing one or more foci of infection.

If the wall of the fistulous tract is well formed and densely fibrous, one of the most satisfactory procedures is to make an incision around the external opening and dissect down to the tract, then, by blunt separation, free the fibrous tube entirely and cut it off at the mucous membrane attachment, taking care to excise a small amount of the mucous membrane. The tract almost invariably passes through the external sphincter fibers, and hence there is plenty of it left superiorly; therefore, incision is made through the overhanging tissue and muscle, using care to incise at a distinct right angle to the fibers. The excessive overhanging skin flaps are excised, bleeding points, if any, are ligated, a piece of flat rubber drain is placed in the base of the old tract, and a vaseline gauze dressing held snugly in place by adhesive straps and T-binder is applied.

If the wall of the tract is thin and tears easily, obviously this procedure cannot be carried out. In these, we pass a silver wire probe through the entire tract and in as much as the wire is very flexible, we form a loop with it, thus putting the fistula on a tension. The intervening tissue is incised, the base of the tract excised, and the remainder of the operation is as above stated. Thus we see that we have done more of a fistulatomy than a fistulectomy.

SIMPLE INCOMPLETE FISTULA

This type of fistula is one which has an internal opening, but no external or secondary skin opening, the so-called blind fistula. They are discovered only by a proctoscopic examination and, too, their treatment must be started from the inside. A single blade Sims retractor is inserted into the anus with the concavity toward the tract, and a stiffer probe, bent at an acute angle on the end, is hooked into the tract. This type of probe permits tension to be made on the anus, and here again the intervening tissue is incised, the excessive tags removed, and the operation terminated as usual.

Complex Complete Fistula

Under this classification we group those fistulae having multiple external openings, either active or inactive, at the time. Their care necessitates the incorporation of the cardinal principles; i. e., isolation of the internal opening and eradication of the tract, regardless of where it goes.

For this type, we start our operative procedure by injecting a one per cent methylene blue dye through the external opening in order to stain the tract well. At the same time, we have the gloved finger inside the anus producing slight pressure over the internal opening. The pressure on the plunger of the injecting syringe is never very much, so we have no fear of disseminating the dye through the wall of the fistula. Our purpose is to stain and identify all the communicating sinuses. A probe is now passed into the external opening, and an attempt is made to pass it on through the internal opening into the rectum. It must be remembered that this type usually has an enlarged cavity, from which the various tracts lead off, producing a vestibule, or ampulla, effect, and this makes it extremely difficult to isolate the internal opening at times. At any rate, the tract should be opened, and all communicating branches incised so to make the wound into one. No excessive overhanging skin flaps are left, and the angles of the wound should be incised to prevent their lipping and consequently creating a pooling which will, in turn, retard the healing process. The fistula wall may or may not be dissected away, but the least thing one should do is to scrape out the excessive granulation tissue with a piece of dry gauze. Now the muscle must be dealt with in order to obliterate the internal opening. Those fistulae opening into the rectum laterally or posteriorly seldom emerge so deeply that one must incise all of the external sphincter. If this extensive division is necessary, the seton should be used; but, if not, then the muscle fibers should be divided straight across as before described. At times the internal opening is very large, and consequently a goodly portion of the sphincter fibers are destroyed or replaced by fibrous bands. Incision through the intervening integument near by releases this constriction, and consequently releases, to a great extent, the true pain-bearing area. In this extensive type of fistula, with its greater sphincter damage, we do not try to dissect the scar from the sphincter fibers, as they are firmly bound together, and this alone will prevent a separation large enough for incontinence.

The horseshoe fistula is dealt with, in the main, on the same principles, but one thing should never be done, and that is, cut through either anterior or posterior ligaments. Cut up to, but never through.

Discussion of the Use of the Seton

A seton may be defined as a surgical suture. Its use in proctology is a safety valve for the prevention of incontinence following fistulectomy. We have reserved the discussion of fistulae in the anterior quadrant, multiple fistula, and those whose internal openings are so deep that all of the external sphincter must be divided in order to group them under this one heading.

The external sphincter muscle fibers are, in the main, annular. Posteriorly, they decussate in an imperfect V from the anococcygeal ligament. Anteriorly, the fibers interdigitate with each other, but are also attached by a rather thin muscle and fibrose bundle to the perineal body. We feel free in dividing the sphincter fibers almost through in their entirety posteriorly and laterally, because one might visualize that the posterior pull is more or less in a straight line, while anteriorly, it is directly away from each cut end. Therefore, when one-half or more of the external sphincter needs incising anteriorly, we utilize the seton. The fistula tract is opened or dissected out, according to the consistency of the wall. The deep fibers of the sphincter are divided so that from one-half to one-third of the external fibers remain. A piece of heavy braided silk is then passed from without inward and loosely tied. This isolates the remaining fibers to be cut later. The wound is permitted to granulate up so that only a tract remains around the silk suture. This requires about two to three weeks. At the end of this time, under local anesthetic, in the office, the remaining tissue is incised and the previously-formed scar tissue prevents the separation of the sphincter muscle, just as the muscle fibers left intact prevent the deep fibers from separating immediately at the time of the original surgery.

It is in the female that great care should be used in those fistulae entering deep. If a fistula operation necessitates the severance of the transverse perinei muscles, they should be sutured together again. Strangely enough, in the male, quite often the tract enters the anus rather superficially, but the external, or secondary, opening is abnormally far anteriorly to either side of the base of the scrotum. Obviously, the use of the seton in this type may be disregarded. Further enlightenment on this subject may be gained by reading Rainey's classic delivered at the A. P. S. in 1940.

In dealing with multiple fistulae it is very important to know how to use the seton. A sphincter should never be incised more than once at one setting. One fistula may be incised or excised, whereas the other, or others, as the case may be, should have the benefit of the seton. Multiple fistula internal openings are rare.

The same principle should be followed on those fistulae whose internal openings are deep to the entire sphincter. Fistulectomy or fistulatomy should be done up to the sphincter, the deeper fibers of the muscle are incised until one-half to one-third remains, and then the seton put in place.

The patients should be warned that they have such a loosely-tied suture because they may decide to cut it out for you a little prematurely. Too, one should be careful to tie a square knot because a "granny knot" slips easily.

There are other types of fistula which enter the anorectal region which are mere complications of another process. There is the one which is the inferior terminus of the pilonidal cyst, not very common, but nevertheless it does occur. I have seen only two. The pilonidal sinus tracts and the fistula must be eradicated here.

Multiple fistulae occur with lymphopathia venerea, and also the majority of the recto-vaginal fistulae that we see are secondary to this disease process, the rupture from the rectum being located superior to the stricture occurrence. The anal fistula may be incised, but it is best to leave the recto-vaginal fistula in this disease, and rely on the sulfonamides for further treatment, and a colostomy, if necessary.

Up to this point, we have dealt, in a general way, with the operative care of anorectal fistulae. Obviously, operation is not all, for there follows the very important postoperative care. You will note that we have not mentioned the fact that we suture any wound, either at the sphincter muscle level or at the distal end of the wound. Too, you probably will note that we do not pack the wounds full of any gauze whatsoever. Sutures tend to slough in infected tissue (and the rectum is always infected), and gauze packing not only causes pain when removed, but dams a wound open and prevents its normal contraction. No act courts an incontinent rectum any more than an incised sphincter kept apart by a gauze pack. We use a strip of thin rubber tissue which does not become adhered in any way, yet preserves our fistula channel temporarily. This invites healing from the bottom of the wound without incarceration of infected tissue and a subsequent reformed fistula.

The dressing and rubber drain are removed in twenty-four hours. At this time, the well-lubricated finger is passed into the anus and brought out through the tract. Lately, we have been applying sulfathiazole powder in these fistula wounds, and find that they granulate better and are kept dry. This invites better healing, and the wounds are not as tender and painful. If we are using powder, more is dusted in at this time. If not, warm glycerin compresses of cotton balls soaked in glycerin are applied every four hours with a hot-water bottle. The diet is changed to soft low residue from the liquid diet the day of operation. Sitz baths are given in thirty-six hours and continued B I D and P R N. The patient is permitted to have a bowel action in forty-eight hours preceded by a soda enema and a laxative the night before. On this day the patient eats a regular diet, but his residue is still restricted. He is discharged from the hospital by the end of the second to fourth day post operation, usually the third. We permit bathroom privileges as early as the day of operation.

The aftercare consists, in the main, of keeping the external portion of the wound open and permitting free granulation to occur in its base. He should be seen at least twice a week until healed, this requiring usually from four to twelve weeks, depending upon the size of the original wound. Keep the wounds clean, do not permit pocketing or bridging, and prevent any excess granulation tissue accumulation, and failures will be rare, if any. The postoperative care is rather simple, but one of the most important steps in the cure of an anorectal fistula.

SUMMARY

1. The treatment of anorectal fistula is discussed in a general way.
2. The accepted form of treatment is surgery, taking care to positively identify the internal opening, using probes and dyes if necessary.
3. Three types of procedures are discussed, namely—
    (1) Fistulectomy.
    (2) Fistulatomy.
    (3) Use of the seton in conjunction with either fistulectomy or fistulatomy.
4. Fistulae connecting with an adjacent organ or viscus are omitted.
5. The aftercare of the patient consists in preventing wound to bridge or pocket, keeping the wound clean, and preventing the accumulation of excessive granulation tissue.
6. As an added note:
    Smith states that the causes of failure are:
    (1) Failure to find internal opening.
    (2) Failure to follow all tracts to their terminus and open or excise them.
    (3) Faulty aftertreatment.

DISCUSSION

DR. B. F. HARDIN (Memphis): I certainly appreciate Doctor Stockman's paper. I think he has covered the subject very thoroughly and very scientifically. I want to congratulate him for handling it so nicely.

A few mornings ago I received a copy of Doctor Stockman's paper, and in his letter he said: "We are laying ourselves wide open, so you will have plenty of ground for attack." I admire Doctor Stockman for laying himself wide open to the extent that he has left very little for me to say. Whatever I might say would just be a recapitulation of what he has already said.

In the doctor's introduction describing the pathology and physiology of an anal fistula, he made a very important point clear, as to the origin of the fistula, which he states is at or near an anal crypt. I wish to stress the importance of this fact because the knowledge will assist one in the location of the internal opening of the nidus of infection. As we know, the crypts are the folds of the mucous membranous side of the pectinate line or the mucocutaneous line, or Hilton's line, or whatever you want to call it. By knowing this we know that the internal opening is not far up in the anus; therefore, we know not to look too high up in the anus for the internal opening. Sometimes you hear someone say: "Well, we did find an internal opening up above the pectinate line." That sometimes is present, but we can also find the internal opening at the pectinate line. When the tract has gotten down into the soft tissue, an abscess is formed. This abscess may present itself toward the skin, or it may take any course of least resistance and present itself going upward behind the bowel. Sometimes, from increased pressure, it may form an opening or rupture into the bowel, thus causing the opening higher than the pectinate line, but with the care Doctor Stockman has shown in eradication or extirpation of the entire fistulous tract, we can disregard this upper opening, because we remove the cause and the condition will clear of its own account.

Doctor Stockman's attitude toward the would-be healing effect of paste, caustics, constricting ligatures, and the use of anal dilators to prevent surgery I emphasize for the fact that I think he means to condemn them.

The doctor has said: "There is only one way to treat anal fistula, and that is by some surgical procedure having for its purpose the eradication of the entire tract, including both openings." I think he has told the story in that one expression. He has thoroughly covered the ground if he has nothing else to say but that one statement.

The idea of draining the abscessed space and removing the overhanging skin edges and permitting the healing from the bottom up, allowing the outer parts to remain open until the space has filled up to the fascia and the skin, makes it safe to allow the skin to unite, thus the healing is complete and no dead space is left to give further trouble in this condition.

DR. JOHN L. JELKS (Memphis): Mr. Chairman, I rushed over here because I wanted to hear this paper. There is so much that can be said and yet cannot be said in a few moments. I appreciate this gentleman's paper because it is good.

The anatomy, which is too detailed for me to repeat now, necessitates most fistulae having their origin in the crypt of Morgagni. The majority of fistulae have their origin in a posterior crypt. There are few fistulae that do not have their origin in a crypt. If the fistula is anterior to the mid-line, crossing the anus, that crypt is usually in the anterior quadrant, and it means a more difficult procedure than if the fistula is posterior because the sphincter muscle is more apt to retract.

If you please, I do not advocate a multiple-stage operation for fistulae. I do not care how extensive they are, I do not think it is ideal practice. It hospitalizes the patient too long. I do not care how extensive the procedure may be, I do not anticipate defective control of the bowel. Therefore, when a fistula is excised—and I mean excised, not incised—I catch those ends of the muscle with a silkworm gut suture and hold them not in actual contact, but nearly so, giving adequate drainage, and leave that wound to heal without packing for a period of six to seven days, or eight days if necessary; I get union below, and then I take the suture out and I get good control. I do not advocate operating on fistulae in the presence of hemorrhoids and leaving the hemorrhoids, because you have not cured your patient, and that is your first object, gentlemen. If there is a hemorrhoid opposite the fistulous incision, that hemorrhoid gets larger because of your surgical interference and drops down in there like a ball and socket joint. I have seen too many of those cases not to refer to them and impress that fact upon you. Remove that hemorrhoid or those hemorrhoids at the same sitting. Again, if it be a rectovaginal fistula and that fistula is not in the upper portion of the vagina, I do not see any reason or rhyme why we should not repair that perineum at the same sitting and get a healed result. Gentlemen, I have done this many times, and I see no reason for making an operation for the fistula and then going back and performing another operation.

I do not believe in the seton treatment of fistula because you leave dangerous pathological tissue there that I have seen result in malignancy.

DR. J. M. STOCKMAN (closing): I certainly appreciate the discussion of the paper. I knew that Doctor Jelks would say what he did. I think it gives us the idea that we have not one or two methods that may be used on the repair or cure of a fistula in ano. I recall that Doctor Hirschman, in answer to Doctor Jelks in Cleveland last year, said that apparently they get their wounds in Tennessee a little more sterile than they can get them in Michigan, and I believe that West Tennessee can get them a little more sterile than in East Tennessee.

Doctor Hardin touched on one idea I wish to mention. So often we see interns who come over and insert the finger to the hilt, so to speak, when they start to examine a rectum digitally. That is not where the pathology is usually located; it is right at the mucocutaneous junction. I think a digital examination should be done in stages: first, the mucocutaneous junction, and then, with the cooperation of the patient, you yourself inserting your finger as far as you can to feel as high as you can.

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TENNESSEE DOCTORS AND THE MILITARY SERVICE

The following is a list of Tennessee doctors who have applied for a commission in the Army or Navy. They are arranged in four categories as follows: first, those who have been commissioned and are on duty; second, those who have been commissioned and are awaiting orders; third, those who have applied for a commission and are awaiting action by the proper authorities; fourth, those who have applied for a commission and been rejected on physical grounds. The list under each category is arranged according to counties.

The list is not complete according to the date of publication. It is accurate in so far as our information goes as of the date the JOURNAL goes to press.

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Blount	R. H. Haralson	Maryville
Blount	Joseph T. Marshall	Chattanooga
Blount	Lowell E. Vinsant	Maryville
Bradley	Dwight N. Arnold	Cleveland
Bradley	A. L. Ball	Cleveland
Bradley	Wm. A. Garrott	Cleveland
Bradley	Claud H. Taylor	Cleveland
Bradley	Madison S. Trewhitt	Cleveland
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Campbell	Jos. McCoin	LaFollette
Cannon	R. C. Van Hook	Auburntown
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Shelby—H. D. Gray	Memphis
Shelby—V. A. Hall	Memphis
Shelby—J. A. Hanna	Memphis
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Shelby—John L. Houston	Memphis
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Shelby—John D. Hughes	Memphis
Shelby—Chas. W. Ingle	Memphis
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Shelby—Albert M. Jones	Memphis
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Shelby—W. B. Key	Memphis
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Shelby—W. F. Mackey	Memphis
Shelby—Wm. Battle Malone, II	Memphis
Shelby—Thomas P. Manigan	Memphis
Shelby—P. M. Markle	Memphis
Shelby—Alfred D. Mason, Jr.	Memphis
Shelby—Wm. P. Maury, Jr.	Memphis
Shelby—R. A. Miller	Memphis
Shelby—R. W. Miller	Memphis
Shelby—J. C. Mobley, Jr.	Memphis
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Shelby—Henry Moskowitz	Memphis
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Shelby—Van A. Odle	Memphis
Shelby—Bedford T. Otey	Memphis
Shelby—Alfred H. Page	Memphis
Shelby—Wm. H. Parker	Memphis
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Shelby—J. R. Pepin	Memphis
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Shelby—Raymond W. Polk	Memphis
Shelby—Hugh R. Raines	Memphis
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Shelby—E. C. Segerson	Memphis
Shelby—J. L. Shaw	Memphis
Shelby—Hugh Smith	Memphis
Shelby—P. A. Statile	Memphis
Shelby—S. D. Sullenberger	Chattanooga
Shelby—B. S. Taley	Memphis
Shelby—R. C. Taylor	Memphis
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Shelby—A. B. Tripp	Memphis
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Shelby—Julian K. Welch, Jr.	Memphis
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Shelby—Horace G. Williams	Memphis
Shelby—W. L. Wilhelm	Memphis
Shelby—Harwell Wilson	Memphis
Shelby—John M. Wilson	Memphis
Shelby—J. E. Wilson	Memphis
Shelby—C. Frank Yates	Memphis
Sullivan—J. W. Erwin	Blountville
Sullivan—Tom Kuhnert	Bristol
Sullivan—John Marcy	Bristol
Sullivan—G. W. McCall	Bristol
Sullivan—B. W. Mongle	Bristol
Sullivan—L. B. Snapp, II	Bristol
Sullivan—F. L. Alloway	Kingsport
Sullivan—R. W. Asthalter	Kingsport
Sullivan—H. O. Bolling	Kingsport
Sullivan—R. H. Brown	Kingsport
Sullivan—H. S. Burem	Kingsport
Sullivan—P. W. Cox	Kingsport
Sullivan—John B. Hamilton	Kingsport
Sullivan—R. B. Howard	Kingsport
Sullivan—K. R. Kiesau	Kingsport
Sullivan—M. D. Massengill, Jr.	Kingsport
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Sullivan—W. B. Payne	Kingsport
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Unicoi—W. C. Humbert	Erwin
Unicoi—H. L. Monroe	Erwin
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Washington—W. D. Hankins	Johnson City
Washington—Harry Myron, Jr.	Johnson City
Washington—W. L. Poole	Johnson City
Washington—W. G. Preas	Johnson City

Washington—Hugh F. Swingle------Johnson City
Washington—Charles P. Wofford----Johnson City
Washington—H. B. Cupp---------Mountain Home
Washington—John Busey--------Mountain Home
Washington—Ernest Marcus-----Mountain Home
Wayne—Dexter L. Woods-----------Waynesboro
Weakley—Paul W. Wilson-------------Dresden
Weakley—Madison H. Buckley-----------Martin
Williamson—W. F. Roth, Jr.-------------Franklin
Wilson—O. R. Hill----------------------Lebanon
Wilson—James McFarland, Jr.-----------Lebanon
Wilson—W. K. Tilley--------------------Lebanon

DOCTORS WHO HAVE RECEIVED COMMISSIONS AND AWAITING ORDERS TO ACTIVE DUTY

County *Name* *Address*

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Davidson—Nathan P. Horner----------Nashville
Hamilton—Walter Buckner, II-------Chattanooga
Hamilton—Eugene F. McCall--------Chattanooga
Knox—Chas. M. Armstrong-------------Knoxville
Knox—R. H. Butler--------------------Knoxville
Knox—Sam P. Davidson----------------Knoxville
Knox—James B. Ely-------------------Knoxville
Knox—Peter J. Flippin----------------Knoxville
Knox—D. T. Hoey---------------------Knoxville
Knox—R. E. Lawson-------------------Knoxville
Knox—R. P. Layman-------------------Knoxville
Knox—L. C. Ogle----------------------Knoxville
Knox—J. W. Riggs---------------------Knoxville
Knox—John A. Range------------------Knoxville
Knox—Jacob M. Williams--------------Knoxville
McNairy—T. N. Humphreys---------------Selmer
Madison—Roy M. Neudecker-------------Jackson
Shelby—J. M. Aste----------------------Memphis
Shelby—H. E. Atherton------------------Memphis
Shelby—A. J. Cates-------------------Millington
Shelby—Joseph D. Cleveland------------Memphis
Shelby—Jack S. Goltman----------------Memphis
Shelby—Paul Hill Goodman-------------Memphis
Shelby—Harry Z. Landis----------------Memphis
Shelby—Robert E. Lawson--------------Memphis
Shelby—J. W. McElroy------------------Memphis
Shelby—Ira F. Porter--------------------Memphis
Shelby—Bryant S. Swindoll-------------Memphis

DOCTORS WHO HAVE APPLIED AND WHOSE COMMISSIONS ARE PENDING

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Campbell—C. E. Ausmus--------------------Jellico
Carter—W. W. Evans---------------Elizabethton
Davidson—S. W. Ballard----------------Nashville
Davidson—Theodore W. Davis----------Nashville
Davidson—S. S. Riven------------------Nashville
Davidson—T. Emerson Simpkins--------Nashville
Dyer—Robt. G. Latimer, Jr.------------Dyersburg
Hamblen—Chas. S. Crook-------------Morristown
Knox—E. M. Eddington----------------Knoxville
Knox—Owen D. Moore------------------Knoxville
Knox—H. L. Pope----------------------Knoxville
Knox—Wiley R. Smith-----------------Knoxville
Knox—John Szewczyk -----------------Knoxville
Lincoln—James V. McRady----------Fayetteville
Shelby—M. W. Adams-------------------Memphis
Shelby—Justin H. Adler----------------Memphis
Shelby—G. B. Bland--------------------Memphis
Shelby—R. F. Bonner-------------------Memphis
Shelby—Carey Bringle------------------Memphis
Shelby—L. L. Carter--------------------Memphis
Shelby—Richard E. Ching---------------Memphis
Shelby—Clyde V. Crosswell-------------Memphis
Shelby—J. E. Holmes-------------------Memphis
Shelby—C. K. Lewis--------------------Memphis
Shelby—J. W. McKinney----------------Memphis
Shelby—E. D. Mitchell, Jr.--------------Memphis
Shelby—D. W. Oelker------------------Memphis
Shelby—Sam L. Raines-----------------Memphis
Sullivan—W. C. Correras------------------Bristol

DOCTORS WHO APPLIED FOR COMMISSIONS, BUT REJECTED ON PHYSICAL GROUNDS

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Cannon—Carl E. Adams---------------Woodbury
Anderson—A. J. Butler-------------------Clinton
Carter—John L. Chesnut------------Elizabethton
Carter—E. T. Pearson--------------Elizabethton
Coffee—Wm. M. Minnis-------------Manchester
Davidson—E. E. Anderson--------------Donelson
Davidson—R. Z. Linney-----------------Madison
Davidson—Joe E. Sutherland----Madison College
Davidson—J. J. Ashby------------------Nashville
Davidson—Edward H. Barksdale-------Nashville
Davidson—Lynch D. Bennett-----------Nashville
Davidson—Randolph A. Cate----------Nashville
Davidson—David W. Hailey------------Nashville
Davidson—Andrew N. Hollabaugh------Nashville
Davidson—Thos. M. Jordan------------Nashville
Davidson—Carl Kirchmaier ------------Nashville
Davidson—N. B. Morris----------------Nashville
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Davidson—James N. Owens------------Nashville
Davidson—Don C. Peterson------------Nashville
Davidson—Paul E. Purks--------------Nashville
Davidson—Jas. S. Reed----------------Nashville
Davidson—Eugene M. Regen-----------Nashville
Davidson—D. W. Smith----------------Nashville
Davidson—Albert Weinstein ----------Nashville
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Davidson—V. J. Wong-----------------Nashville
Davidson—J. H. Solomon-----------Old Hickory
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Gibson—Henry N. Moore--------------------Milan
Gibson—F. A. Taylor--------------------Trenton
Greene—Rae B. Gibson---------------Greeneville
Hamblen—Y. A. Jackson-------------Morristown
Hamblen—Maxwell D. Raine---------Morristown
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Hamilton—William D. Anderson-----Chattanooga
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Hamilton—Erwin M. Funderburk----Chattanooga
Hamilton—Orville C. Gass----------Chattanooga
Hamilton—Foster Hampton, Jr.------Chattanooga
Hamilton—John W. Hocker---------Chattanooga
Hamilton—D. Isbell ----------------Chattanooga
Hamilton—D. B. Karr--------------Chattanooga

Hamilton—Geo. E. Lacy	Chattanooga
Hamilton—J. G. McMillan	Chattanooga
Hamilton—Tim J. Manson	Chattanooga
Hamilton—Fred E. Marsh	Chattanooga
Hamilton—J. R. Martin	Chattanooga
Hamilton—E. E. Reisman, Jr.	Chattanooga
Hamilton—Clarence Shaw	Chattanooga
Hamilton—H. J. Starr	Chattanooga
Hamilton—W. E. Van Order	Chattanooga
Hamilton—J. J. Word	Chattanooga
Hamilton—P. H. Dietrich	Ooltewah
Hardeman—Aubrey Richards	Whiteville
Hawkins—John E. Kite, Jr.	Bulls Gap
Henry—Barton McSwain	Paris
Knox—Troy P. Bagwell	Knoxville
Knox—Charles W. Black	Knoxville
Knox—P. H. Cardwell	Knoxville
Knox—William E. Clark	Knoxville
Knox—Roy Fisher	Knoxville
Knox—John R. Hill	Knoxville
Knox—Geo. T. Howard	Knoxville
Knox—George L. Inge	Knoxville
Knox—Joel C. Morris	Knoxville
Knox—Bruce R. Powers	Knoxville
Knox—V. I. Smith	Knoxville
Knox—Philip C. Thomas	Knoxville
Knox—Geo. M. Trotter	Knoxville
Knox—Richard G. Waterhouse	Knoxville
Knox—V. M. Williger	Knoxville
Lawrence—V. H. Crowder	Lawrenceburg
Lawrence—W. O. Crowder	Lawrenceburg
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Madison—Glenn D. Batten	Jackson
Madison—Leland M. Johnston	Jackson
Madison—John C. Pearce	Jackson
Marshall—J. T. Gordan	Lewisburg
Maury—H. C. Busby	Columbia
Morgan—Wm. E. Gallion	Oakdale
Robertson—J. E. Wilkison	Springfield
Sevier—R. A. McCall	Sevierville
Shelby—Jacob Alperin	Memphis
Shelby—J. C. Ayres, Jr.	Memphis
Shelby—William A. Barnes	Memphis
Shelby—Harold B. Boyd	Memphis
Shelby—Davis L. Brown	Memphis
Shelby—W. D. Burkhalter	Memphis
Shelby—Chas. H. Carter	Memphis
Shelby—Peter J. Cavallo	Memphis
Shelby—Isaac S. Coe	Memphis
Shelby—E. D. Connell	Memphis
Shelby—Jewell M. Dorris	Memphis
Shelby—George C. Furr	Memphis
Shelby—David W. Goltman	Memphis
Shelby—H. Wm. Greenburgh	Memphis
Shelby—A. J. Grobmyer, Jr.	Memphis
Shelby—Robert M. Gross	Memphis
Shelby—Chas. Wm. Harting	Memphis
Shelby—H. J. Jacobson	Memphis
Shelby—Lyman Kasselberg	Memphis
Shelby—Robert A. Knight	Memphis
Shelby—Phil M. Lewis	Memphis
Shelby—Frank O. McGehee	Memphis
Shelby—C. H. McKay	Memphis
Shelby—Leroy H. Mayfield	Memphis
Shelby—C. Wilson Moore	Memphis
Shelby—Swan B. Moss	Memphis
Shelby—Thos. C. Moss	Memphis
Shelby—Charles M. Oberschmidt	Memphis
Shelby—Chas. B. Olim	Memphis
Shelby—Michael J. Roach, Jr.	Memphis
Shelby—Jesse M. Roy	Memphis
Shelby—Arthur R. Sample	Memphis
Shelby—David E. Scheinberg	Memphis
Shelby—Phillip C. Schreier	Memphis
Shelby—Lawrence Sebulsky	Memphis
Shelby—Chas. C. Smeltzer	Memphis
Shelby—Jos. S. Stabnick	Memphis
Shelby—E. A. Stanfield, Jr.	Memphis
Shelby—Edwin M. Stevenson	Memphis
Shelby—W. W. Taylor	Memphis
Smith—L. R. Sloan	Carthage
Sullivan—Wm. H. Chappell	Kingsport
Sullivan—W. A. Wiley	Kingsport
Washington—J. R. Bowman	Johnson City
Washington—T. P. McKee	Johnson City
Washington—John F. Moore	Johnson City
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Williamson—R. H. Hutcheson	Franklin

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H. H. SHOULDERS, M.D., Editor and Secretary

NOVEMBER, 1942

EDITORIAL

MEDICAL SERVICE

Medical service has been the subject of a considerable amount of comment in the newspapers, in magazines, on the radio, and on the Senate floor within the last few weeks.

At least some of the comment is calculated to alarm both the public and the medical profession. Some of the comment is calculated to convince the public that a serious epidemic is threatened and may come about unless some vast new powers are created and vested in a federal agency.

The profession and the public, too, should feel disturbed by the fact that the suggestion is made that vast new powers and functions be vested in the United States Public Health Service.

A brief review of the situation, it seems, is in order. At the request of the Surgeons General of the United States Army and Navy, the American Medical Association took action in June, 1940, to create a medical preparedness committee.

It is well to remember that June, 1940, antedates Pearl Harbor by almost eighteen months, and that during this period there were many assurances from high places that there would be no war and that our troops would not be sent to foreign battlefields.

In spite of all the handicaps in the form of public sentiment created by propaganda, the committee functioned well and made available to the federal government a wealth of indispensable information.

In June, 1941, the Committee on Medical Preparedness recommended that it be discontinued and that a government agency be created to take over the functions of a procurement and assignment agency. It was obvious then that such an agency should be endowed with government authority.

It was some months later before the Procurement and Assignment Agency was created. It was still some months later before it was provided with the necessary finances, personnel, and facilities to carry on its work in the manner it should be done. In spite of these handicaps the agency functioned as well as it could.

Another handicap in the way of the complete functioning of the Procurement and Assignment Agency with respect to doctors in draft age is the fact that the draft boards are endowed with absolute authority as to the disposition of any registrant under the draft act.

The Procurement and Assignment Service was not in a position at an early date to give assurances to young doctors in the draft age that those classed as essential to civilian communities by Procurement and Assignment would be deferred by their Selective Service Boards. Agreements and understandings were established later which have been effective.

It should be stated in this connection that in so far as Tennessee is concerned, the Selective Service Boards have cooperated with the Procurement and Assignment Committee in every instance in which conflict of judgment has arisen. That is to say, the draft boards have given a deferred classification to every doctor who, in the opinion of the Procurement and Assignment Committee, was urgently needed in the community in which he is in practice so long as he practices in that community.

The Procurement and Assignment Service, therefore, may have made some mistakes. It is obvious that most of the mistakes were due to handicaps, over which it had no control.

The attempt to create the impression that the agency has not functioned well under the circumstances is very misleading and erroneous and certainly does not serve a constructive purpose in this emergency.

With reference to the medical care of the civilian population: It is to be frankly admitted that the civilian population cannot have the same services that were available in peacetime. If the needs of the Army and Navy are met, a large number of doctors will be in the military service. It seems that the time has come that the civilian population must recognize this fact and adjust themselves to it with patriotic grace, and not follow the leadership of wild agitators who have been agitating for radical change in medical care for many years. It seems that some agitators have seized upon the present emergency as an opportune moment to secure the adoption of *their radical ideas.*

Attention is called to an article in the November issue of *Harper's Magazine* by Mr. Michael M. Davis under the heading, "The Doctor Shortage." Among other things he says: "The Procurement and Assignment Service for Physicians, Dentists, and Veterinarians was set up by presidential order late in 1941 to 'aid and control' the recruiting of these professionals by voluntary enlistment, but this body has been slow-moving and unequal to the task of control. An enormous amount of time was spent in obtaining professional and personal information about every physician in the United States so as to be able to judge his usefulness for military or civilian work, but no effective organization was set up to deliver the goods. For the delay in recruiting sufficient doctors, confused instructions to physicians were largely responsible. For the uneven selection of doctors, the chief cause was failure to supply the state committees with quotas showing the number of physicians that might wisely be taken from each area. (Such quotas are based on ratios of physicians to population, as well as upon actual numbers of doctors; all the necessary data have been available for years.) A go-easy policy was pursued until months after Pearl Harbor. The Procurement and Assignment Service, suggested originally by the American Medical Association, has been practically a governmentally recognized arm of that body."

Mr. Davis also suggests a remedy. It is as follows:

"The need and the machinery for action have both been demonstrated. Under Surgeon General Thomas Parran, the United States Public Health Service has found out the medical, sanitary, and hospital needs of war areas by firsthand field studies. Let us hope that, by the time this article is in print, the Public Health Service will have been given the long-delayed authority to act as well as study. Should governmental timidity permit a division of responsibility between the Public Health Service and the Procurement and Assignment Agency—a compromise toward which at this writing official medical pressures are exerted—the settlement will be only temporary because it will certainly be ineffective in handling the problem."

It is intimated by Mr. Davis that there is a conflict between the United States Public Health Service and the Procurement and Assignment Service Agency. It is obvious that there is no conflict of function between the two agencies. The functions of the United States Public Health Service have to do with the enforcement of measures calculated to prevent disease and epidemics. The functions of the Procurement and Assignment Service have to do with the procurement of medical officers for the Army and Navy with the least possible impairment to civilian needs. If any conflict exists between the two, it is a conflict which grows out of an effort on the part of one agency to intrude itself upon the other. Certainly the Procurement and Assignment Service has never sought the authority to perform the functions of the United States Public Health Service.

Furthermore, one of the best ways to invite an epidemic would be to place such dual functions, as those above cited, in the

United States Public Health Service. It would mean that men who are well trained in the field of disease prevention and epidemiology would be performing the functions of a personnel officer and certainly nothing but confusion could grow out of that. Out of such an error might grow epidemics and more confusion than exists already.

There is another important reason why the Surgeon General of the United States Public Health Service should not exercise the functions of the Procurement and Assignment Agency. It is this: The Public Health Service is a permanent agency. It functions in peacetime as well as in wartime. The Procurement and Assignment Service was created to serve in the emergency, and when the emergency is over it will cease to function.

If these emergency duties and powers were vested in the United States Public Health Service, there is little reason to believe that the functions would cease.

The suggestion then by Mr. Davis as to what should be done in the present emergency is not born of an accurate concept of these respective functions. The possibility of an ulterior motive in the suggestion is quite apparent.

It might be worth while to call to the attention of Mr. Davis the fact that an epidemic of typhus fever occurred in the South a few years ago and gained considerable headway in several different states. All this occurred at a time when some of the personnel of the United States Public Health Service were devoting a great deal of time to purely medical care problems. It is possible that this calamity might not have occurred if the service had devoted all its energy and time to the function of disease prevention.

Then the only change that is needed for the best possible solution to the problem, from the standpoint of the military service, the general public, and the medical profession, is that essential government support by given the Procurement and Assignment Service.

IMPORTANT COMMUNICATIONS

The following communications are published for the information of the profession and hospitals:

OFFICE OF WAR INFORMATION
WAR MAN POWER COMMISSION

"The Directing Board of the Procurement and Assignment Service is pleased to announce that ninety-five per cent of the 1942 procurement objective of medical officers for the armed forces has already been met. Toward this total a number of states have supplied more than their share of physicians and only a few states are lagging behind in their quotas. It is from these states that the additional physicians needed during the current year should come.

"The recruitment of such a large number of physicians in a few months is a remarkable achievement and another demonstration of the traditional patriotism and unselfishness of the medical profession. In this achievement, and particularly in those of its members who are 'in service,' the profession can justifiably take pride.

"The end, of course, is not yet. Increases in the armed forces will necessitate more medical officers and additional demands will be made upon the profession for medical services in critical war production areas. The Directing Board is convinced, however, that the physicians of this country will respond to future calls for service, whatever they may be, in the same splendid manner with which they have already volunteered for service with the armed forces.

"FRANK H. LAHEY, M.D.
"HAROLD S. DIEHL, M.D.
"HARVEY B. STONE, M.D.
"JAMES E. PAULLIN, M.D.
"C. WILLARD CAMALIER, D.D.S.,
"Of the Directing Board."

WAR DEPARTMENT—SERVICES OF SUPPLY
OFFICE OF THE SURGEON GENERAL,
WASHINGTON

October 1, 1942.

Re: Coordination of internships with the accelerated medical program.

Dear Sir:

"The Surgeon General, United States Army, has been keenly appreciative of the attitude and cooperation of the medical schools, postgraduate medical institutions, and hospitals approved for internship during our present war effort. It seems advisable now to issue general suggestions and recommendations from the War Department pertinent to closer cooperation between hospitals approved for internship and the medical colleges under the accelerated medical program. After careful study of the situation and the best information available, the Surgeon General is loathe to recommend that a graduate physician of an approved school be called to active duty with the armed forces prior to completion of a twelve (12) months' general rotating internship. It is obvious that if the hospitals approved for internships do not cooperate with the accelerated program, it would lose its effectiveness in releasing men for duty with the Medical Corps as soon as anticipated. There is now an urgent need for young, physically qualified medical officers for field troop duty.

"Original directives from the War Department indicated that graduates were allowed twelve (12) to eighteen (18) months for completion of essential internships. In many instances, heretofore, interns have interpreted this directive as being authority to utilize the additional time for hospital training before beginning the twelve months' rotating internship. This has also allowed hospitals which customarily start their intern classes on or about July 1 of each year to maintain original schedules. It is believed that each hospital should establish a schedule of internships commencing on or about April 1, 1943, available to those who graduate in March, 1943, under the accelerated medical program, and thereafter, as students graduate.

"This obviously results in doubling up of those who have not yet completed their twelve months beginning July 1, 1942, but it is hoped that these interns can be used in approved affiliated internships or in the capacity of subresidents to assist in the orientation of medical school graduates of March, 1942. The most recent information available of the interns' situation indicates that there are excessive position vacancies over the supply of available interns.

"Unless the situation demands it, the War Department does not desire to shorten the period of internship to less than the twelve months required. However, under the increasing pressure of our military needs, it is necessary to expect graduates to be immediately available, if physically qualified, twelve months from the time of their graduation. The War Department does not feel that the eighteen months, originally indicated, is necessary for completion of a twelve months' internship and this time will, therefore, no longer be allowed.

"It is hoped that all interns will be trained in the *rotating type* of internship for the twelve months' period; that is, one which provides training in medicine, surgery, pediatrics, and their related subspecialties, together with experience in laboratory and roentgenological diagnosis. The Surgeon General realizes the necessity of maintaining some house officers after the general rotating internship. However, it is desired that these positions be filled by those individuals not physically fit for military duty and those who are over age for troop duty. By following this procedure and increasing the duties of house officers and the essential staff membership, it is believed that a greater proportion of each year's intern class will be made available for active military duty.

"Again attention is invited to the new War Department directive precluding the appointment of senior medical students for interns as medical officers, Army of the United States, until within sixty days of their proposed active duty date. Such students and interns are protected from call to active duty by the War Department by:

"1. Selective Service agreement.

"2. Medical Administrative Corps commissions.

"3. Commissions as reserve line officers, which they will receive upon graduation from college.

"This is accomplished under the authority of the War Department, A. G. O., letter dated May 8, 1942, subject: 'Commissions for Medical Students,' the main purpose of which is to protect the essential medical training program.

"The Surgeon General wishes to express again his appreciation for the cooperation between the various agencies concerned and the War Department in this matter and to express the desire that such cooperation shall continue. If the internships are interrupted by active duty orders due to changes in the military situation or if the ideal length of internship has to be shortened, it is hoped by the Personnel Division of the Surgeon General's office that assignments can be given which will be acceptable both to the individual, the hospital, and the various medical boards for licensure in the various states of the Union.

Sincerely yours,

"CHAS. L. KIRKPATRICK,

"*Lieutenant Colonel, Medical Corps, Acting Executive Officer.*"

NEWS FROM AND ABOUT TENNESSEE DOCTORS IN THE MILITARY SERVICE

Wallace L. Poole, lieutenant commander, M. C., U. S. N. R., Johnson City, to U. S. Naval Hospital, Naval Operating Base, Norfolk, Virginia.

M. J. Bellaire, captain, M. C., Morristown, to Camp Pickett, Virginia.

E. E. McKenzie, Memphis, to 455 West Fourth Street, Hattiesburg, Mississippi.

Ogle Jones, captain, M. C., Nashville, to 28 Station Hospital, Fort Bragg, North Carolina.

William A. Garrott, captain, M. C., Cleveland, to 131st Station Hospital, Camp Rucker, Alabama.

Jack Chesney, captain, M. C., Knoxville, to Fitzsimmons General Hospital, Denver, Colorado.

Franklin B. Bogart, major, M. C., Lawson General Hospital, Atlanta, Georgia, to Letterman General Hospital, San Francisco, California; chief of Radiological Service.

J. K. Welch, Jr., lieutenant, M. C., Camp Grant, Illinois, to Medical Detachment, 73d Armored F. A. Battalion, Ninth Armored Division, A. P. O. 259, Fort Riley, Kansas.

Justin H. Adler, captain, M. C., Memphis, to O'Reilly General Hospital, Springfield, Missouri.

Webb B. Key, lieutenant commander, M. C., U. S. N. R., formerly of Memphis, is the new medical officer at the naval training school for machinists at the University of Kansas, Lawrence, Kansas.

H. M. Ausherman, captain, M. C., Madison, Wisconsin, to 0-361105 Second Auxiliary Surgical Group, A. P. O. 640, care Postmaster, New York City.

E. B. Rhea, captain, M. C., Old Hickory, to Station Hospital, Camp Van Dorn, Missisippi.

J. H. Lotz, M. C., U. S. N. R., Memphis, to U. S. Naval Hospital, Pensacola, Florida.

Merrill Moore, major, M. C., AUS 0-247992, 39th General Hospital, A. P. O. 3284, care Postmaster, San Francisco, California, wrote a card to say hello and goodbye. He was bound for somewhere "down under."

R. L. Dozier, captain, M. C., Nashville, to Station Hospital, Camp Rucker, Alabama.

Daniel Jay Johns, Jr., captain, M. C., Nashville, to 3659 Pine Street, Jacksonville, Florida.

George K. Carpenter, major, M. C., after a few days' furlough in Nashville, has been assigned to duty as chief of orthopedic surgery at the Halloran General Hospital, Willow Brook, Staten Island, New York.

Robert C. Robertson, lieutenant colonel, M. C., Chattanooga, to Department Surgeon's Office, Fort Shafter, T. H.

Joe L. Raulston, captain, M. C., El Paso, Texas, to Camp Chaffee, Arkansas.

James R. Fancher, major, M. C., Camp Forrest, Tennessee, to Medical Section, Headquarters VII Corps, A. P. O. 307, San Jose, California.

J. A. Crisler, Jr., major, Memphis, to Halloran General Hospital, Staten Island, New York, as chief of the General Surgical Section.

DEATHS

DR. BENJAMIN E. CLINE

Dr. Benjamin E. Cline, Strawberry Plains; University of Louisville (Kentucky)

Medical Department, 1894; aged seventy-two; died September 10, 1942, of angina pectoris.

DR. JAMES W. BODLEY

Dr. James W. Bodley, Memphis; University of Pennsylvania, School of Medicine, Philadelphia, 1915; aged fifty-four; died suddenly, October 27, 1942.

NEWS NOTES AND COMMENTS

Dr. W. M. McCabe announces the opening of his office, specializing in psychiatry, at 329 Doctors Building, Nashville.

Dr. M. C. Wiggins of Paris, Tennessee, is now located at 1930 East Fourth Street, Tucson, Arizona.

Dr. W. J. Breeding of 3509 Central Avenue, Nashville, is now at 926 East McDonald Street, Lakeland, Florida.

MEDICAL SOCIETIES

Davidson County:

October 13—"Objective of Nashville of City Venereal Disease Control Program," by Dr. M. C. Brown.

"Syphilis, Treatment Principles and Treatment Problems," by Dr. Harry Pariser.

October 20—"Tularemia," by Dr. E. W. Goodpasture. Discussion by Dr. D. W. Smith.

October 27—"Blood and Water," by Dr. Richard A. Barr. Discussion by Dr. D. W. Smith.

November 3—"Shute Orchidectomy for Prostatic Malignancy (report of two cases)," by Dr. P. G. Morrissey and Dr. Carl Adams.

Sound motion picture on "Peptic Ulcer," by Dr. E. D. Kiefer of Department of Gastroenterology of the Lahey Clinic, Boston, Massachusetts.

November 10—"Surgery of the Lungs and Esophagus," by Dr. Rollin Daniel. Discussion by Dr. Murray B. Davis.

Hamilton County:

October 29—"Some of the Pioneers of the Local Profession," by Dr. J. C. Brooks.

November 5—"Chest Wounds," by Dr. P. H. Dietrich.

"The Progress of Cancer Research of the Year," by Dr. S. S. Marchbanks.

Knox County:

"Surgery of Chronic Arthritis," by Dr. George Inge. Discussion by Dr. Robert Patterson.

Movie, "Technique of Massage."

It was voted to have two meetings per month for the duration of the war. The meetings will occur on alternate Tuesday nights, namely, October 20, November 3, November 17, December 1, December 15, etc.

R. B. WOOD, M.D., *Secretary.*

Wilson County:

November 5—"Obstetrical Emergencies," by Dr. C. T. Lowe.

On December 3 Dr. J. H. Tilley is scheduled to read a paper on "Treatment of Compound Injuries" and Dr. Jerry McFarland to give a case report.

OTHER MEDICAL SOCIETIES

The ninety-sixth semiannual meeting of the Middle Tennessee Medical Association will be held on Thursday, November 19, 1942, at Columbia. Dr. Beverly Douglas, Nashville, is secretary.

The Executive Committee of the Rocky Mountain Medical Conference has by unanimous vote directed that the fourth biennial meeting of the conference, originally scheduled for May 19, 20, 21, 1943, at Albuquerque, New Mexico, be postponed indefinitely on account of war conditions.

The American Board of Obstetrics and Gynecology announces that the next written examination and review of case histories (part one) for all candidates will be held in various cities of the United States and

Canada on Saturday, February 13, 1943, at 2:00 P.M.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

The annual Clinical Congress of the American College of Surgeons, which was scheduled to be held in Cleveland, November 17-20, 1942, and the annual meeting of the Fellows for 1942 were cancelled by the Board of Regents of the College at a meeting held in Chicago, Wednesday morning, October 14.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

The Anesthetist Assists the Psychiatrist: Case Reports. Livingstone and Light. Anesthesia and Analgesia, November-December, 1940.

The author reports the use of intravenous evipal and rectal avertin followed by intravenous sodium amytal as therapeutic measures coupled with suggestion in the treatment of two psychiatric patients.

The first case was that of a boy who developed amblyopia and aphonia after a decompression for a head injury. He was anesthetized by three cubic centimeters of a ten per cent solution of evipal. On reacting his voice returned and he was able to identify objects by sight. The second case was that of a boy whose lack of hearing, taste, and smell was of hysterical origin. After intravenous injections of sodium amytal, these special senses returned to normal.

These cases demonstrate the ever-increasing scope of modern anesthesia in its relationship to other branches of medicine.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Gonococcal Conjunctivitis: A Comparison of Sulfanilamide, Sulfapyridine, and Sulfathiazole in the Treatment of 120 Cases. P. M. Lewis. American Journal of Ophthalmology, October, 1942.

Every case of gonococcal conjunctivitis should immediately receive adequate systemic treatment with sulfapyridine or sulfathiazole. Local instillation of a five per cent solution of sodium sulfathiazole into the eye every two hours is of value as a supplement to systemic treatment.

Sulfapyridine is remarkably effective in the treatment of gonococcal infections of the eye. Sulfathiazole is somewhat less effective. Both are definitely superior to sulfanilamide.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Pertussis Prophylaxis: A Clinical Study. John F. Coppolino, M.D., Philadelphia, Pennsylvania. The Journal of Pediatrics, September, 1942.

The author followed the experience of 312 children with pertussis over a period of five years. One group of 152 children was given, when about seven months of age, three successive subcutaneous doses of twenty billion, forty billion, and forty billion Hemophilus pertussis (phase one) bacilli in a heavy suspension, the vaccine being given at two- or three-week intervals. The other group of 160 children received no prophylactic against pertussis and served as controls.

No case was considered exposed to pertussis unless there was intimate contact for two or more hours. The criterion for diagnosis was a paroxysmal cough accompanied by a definite whoop. Any vaccinated child developing a paroxysmal cough without a whoop was considered a case of pertussis modified by the inoculations.

In the control group there were fifty-three exposures to pertussis with eight (15.1 per cent) escapes, while forty-five (84.9 per cent) contracted the disease. There were fourteen mild, twenty-six moderate, and five severe cases.

In the vaccinated children, there were twenty-eight exposures with twenty-six (92.8 per cent) escapes, while two (7.2 per cent) developed pertussis. These were mild.

The interval elapsing between vaccination and exposure varied from two to fifty-six months. One case of pertussis developed thirty-six months and another thirty-nine months after inoculation. From this study the author concludes that immunity to the disease is conferred early after inoculation and that it may be retained from three to four and one-half years.

No laboratory studies were made on these children. The article is illustrated with several tables of statistics.

ROENTGENOLOGY

By J. Marsh Frere, M.D.
Newell and Newell Sanitarium, Chattanooga

Roentgen Therapy for Rheumatoid Arthritis of the Spine. C. J. Smyth, M.D., R. H. Freyberg, M.D., and Isadore Lampe, M.D. The Journal of the American Medical Association, Vol. 117, No. 10, p. 826, September 6, 1941.

The earliest report we have found of the use of roentgen therapy for rheumatoid arthritis of the spine is that of Kahlmeter in 1930.

Only the patients for whom the diagnosis of rheumatoid arthritis of the spine was established by history, physical signs, roentgenographic examination, and elevation of the rate of erythrocyte sedimentation were selected for this study. The patients were divided into three groups, primarily on the basis of roentgenographic changes: (1) early disease—those with roentgenographic changes limited to the sacroiliac joint; (2) moderately advanced diseases—those with a partly or completely obliterated sacroiliac joint and with calcification of longitudinal spinal ligaments over several segments; and (3) far advanced diseases—those in whom the sacroiliac was completely ankylosed and those in whom extensive paravertebral ligamentous calcification and obvious involvement of the apophyseal occurred with or without involvement of the girdle joints.

The technic of roentgen therapy was as follows: two hundred kilovolts (175 kilovolts constant potential equivalent) was used with five-tenths millimeters of copper and one millimeter of aluminum filtration, a half value layer of nine-tenths millimeter of copper, a fifty centimeter skin-target distance, and an output of fifty r (measured in air) per minute with the usual size of the field approximately 200 to 300 squares centimeters. In the earlier part of our investigation each field was treated three times with 200 r (measured in air) each time. The treatments were given every other day; thus the total dose per field was 600 r. Such therapy hereafter will be referred to as "a series of treatments." More recently the total dose administered to a field (in a "series of treatments") has been reduced to about 300 r, 150 r being given every other day.

Fifty-two patients with typical rheumatoid arthritis of the spine were treated with local high voltage roentgen radiation over the spine. Considering all patients irrespective of the extent of involvement, duration of symptoms, or activity of the disease, thirty-seven (seventy-two per cent) were significantly improved as judged by physical findings. The results were excellent in the patients with early disease, in whom roentgenograms revealed abnormalities only in the sacroiliac joint; in this group ninety-two per cent showed significant, sustained, subjective, and objective improvement, and some were completely relieved of all clinical evidence of the disease. In the later stages, after spinal ligamentous calcification had occurred, we were surprised to find that a high percentage showed significant reduction in pain and stiffness and in some cases objective improvement. We found no evidence for a psychogenic basis for symptomatic relief.

The erythrocyte sedimentation rate decreased significantly after roentgen therapy in forty-one per cent. Leucopenia was found in three patients, but all recovered completely within one month after therapy. We consider leucopenia a potential danger associated with roentgen therapy and wish to emphasize the advisability of frequent blood counts in order to avoid serious ill effects. Further study is necessary to determine the optimal technic of treatment.

We consider roentgen therapy the best method of controlling the symptoms of rheumatoid arthritis of the spine. Whether the benefit is entirely symptomatic relief or whether the course of the disease is favorably affected will need to be determined by further investigation.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

Traumatic and Toxic Production of Urinary Calculi in Animal Experiment. Walter Grossmann. Journal of Urology, September, 1942.

Calculi can be produced in laboratory animals in many different ways. This has been proven by the experiments of several writers, which also show that urolithiasis is not a single disease, but a symptom of a group of diseases.

A number of writers have tried to prove the importance of certain etiological factors in the formation of stones, as hypovitaminosis A, urinary stasis, infection, metabolic disturbances, colloidal imbalance, or papillary calcification. None of these will explain the formation of calculi in all cases.

Since stone formation appears to be the simultaneous action of a number of factors, both general and local, the writers repeated the experiments of Rost on the effects of the inhalation of gas and the shaking of rats on the formation of calculi.

In this experiment twenty-eight rats were used in each experiment and twelve rats as controls. The animals were shaken by a mechanical shaking apparatus, 100 to 120 vibrations per minute, for five to seven minutes, two to three times per week, for from 100 to 120 days.

In the other group the rats were placed in a chamber with sufficient oxygen. The animals were exposed to exhaust gas until they became restless and drowsy for fifteen to twenty minutes, two to three times per week, for 100 to 120 days.

In both groups hematuria was the only clinical sign observed during the experiment. It was microscopic in fifty per cent and in four of the former group and seven of the latter it was macroscopic. At the end of 130 days five of group one and six of group two showed urolithiasis. An autopsy of the urinary organs demonstrated no macroscopic pathology and no significant microscopic pathology.

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CLINICAL RESULTS WITH THE USE OF A BUFFERED ACID JELLY,* pH 4.5 AND OTHER JELLIES OF VARYING pH, IN GYNECOLOGICAL INFECTIONS: STUDY OF 129 CASES

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The majority of the 129 cases were from the out-patient service of the John Gaston Hospital, Memphis, Tennessee; a smaller number included cases from the Station Hospital, Camp Forrest, Tennessee.

Careful histories were taken on all patients. The chief symptom was excessive discharge; this symptom varied in duration from a few weeks in some patients to several years in others. The appearance of symptoms and character were carefully noted, even though in cases of simple discharge, patients often fail to describe the character, intensity, and variations, if any. The relation of the discharge to the menstrual period and the possibility of hemorrhage were determined. Frequently the history of pain was given, localized in one or both lower abdominal quadrants. In all instances venereal infections were ruled out. Associated pelvic disease, with low back pain, was confirmed or discounted by pelvic examinations. Those patients showing pelvic pathology other than cervicitis or vaginitis were omitted from this study.

In over ninety per cent of the cases pH readings (with vaginal electrode connected to a Beckman potentiometer) and routine biopsies were made to substantiate the diagnosis. The average pH in our series before treatment was 7.8 in the posterior fornix; often eight or nine. After a complete history and thorough examination, the diagnosis was reached. Then a careful plan of treatment was outlined to the patient. If she was thought to be unwilling to cooperate, the treatment was postponed until it was felt certain that she would carry out her part of the program. Some of the patients had been taking various and sundry kinds of douches—from vinegar to phenol. Common soda douches and salt douches were perhaps the most common ones.

METHOD OF TREATMENT

No differentiation was made between cases of exocervicitis and endocervicitis; all were treated by the same method. Each patient was instructed to continue her normal routine of living. She was commanded to omit vaginal irrigations except when so advised. The avoidance of irrigations during the treatment must be emphasized, since most patients would be tempted, for hygienic reasons, to undertake irrigation. Particularly in the early days of the treatment, it is important that there should be constant contact of the acid jelly on the cervical and vaginal mucosa. The irrigation would tend to wash this jelly away, and with it remove the agent that would most likely evoke a return to normal pH. The patient was given one tube of the buffered acid jelly and an attachable applicator; she was instructed to use the jelly twice daily—one applicatorful of the jelly (five cubic centimeters) on retiring at night and another applicatorful around 9:00 or 10:00 A.M. each day. She was to use a vulvar pad in case of leakage. Once each week she returned to the clinic for a checkup. Before leaving her home she was to take a vaginal irrigation, using the following mixture: chlorthymol, grains XX; menthol, grains XXX; methyl salicylate, drams i; and lactic acid (USP) qs. ad., ounces VI. One dram of above mixture was added to two quarts of warm water for vaginal irrigation.

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*Formula: Glycerine, ten per cent; vegetable gum, five per cent; boric acid, three per cent; ricinoleic acid, .75 per cent; propyl ester of parahydroxybenzoic acid, .05 per cent; oxyquinoline sulphate, .025 per cent; perfume, .05 per cent; water to 100 per cent. pH adjusted with acetic acid to 4.5. Jelly manufactured by Ortho Products, Inc., Linden, New Jersey.

In the majority of patients, there was definite relief in the first or second week. On examination at this time, we found objective signs of improvement, with the cervix showing recession of the infection. In these cases the patient was advised to reduce the treatment to a single application daily. Since the cooperation of the patient is essential in carrying out this technique, there was a definite, psychological advantage in that the patient invariably felt encouraged to continue the treatment.

At the end of three weeks of this treatment, there is usually so high a degree of improvement that the patient might consider herself cured. The cervix at this time appears quite clean. The jelly application is now suggested for each night on retiring, with a vaginal irrigation the following morning.

Occasionally and in selected cases only, the cervix is touched up with a twenty per cent to twenty-five per cent silver nitrate solution, particularly in cases of overactivity of the cervical glands (ectasia), in which instances the silver nitrate is applied on cotton swabs and gently rotated in the cervical canal. In this condition the gynecologist will often observe mucous plugs and "strings" in the canal. Since, at this concentration, the silver nitrate will act as a cauterizing agent, exceeding caution must be exercised not to overdo the treatment. This treatment of the cervix, where indicated, will prove of material help to the jelly in clearing up the infection.

In our series about 100 of the 129 cases were so improved after seven weeks of the above treatment that the jelly administration was reduced still further to a single application one to three nights a week. Later on an occasional application of jelly was suggested for those in whom the return of the pH to normal was delayed. In most patients, however, by the end of six weeks, the pH of the midvagina was observed to return to a point between four and five and, in the posterior fornix, between 4.5 and 5.5. These are normal pH levels.

Record of cures	*No. patients*
Less than six weeks	87
Six weeks	24
Seven weeks to ten weeks	18

The importance of the vaginal pH in the treatment of infection has been quoted by many authorities.[1, 2, 3, 4]

Reduction in the acidity of the vagina permits the growth of foreign organisms, frequently pathogenic, with the elimination of the typical flora, the Doederlein bacilli. Along with the disturbance of pH and flora, there is reduced glycogen content of the vaginal epithelium, and on biopsy the mucosa shows signs of inflammatory reaction.

The buffered acid jelly, in evoking a change of the pH to normal, stimulates the return of the normal flora, the Doederlein bacilli. An increase in glycogen (iodine stain) can also be observed. Biopsies taken at this stage will show a diminution of the inflammatory reaction and a return to normal histological characteristics.

In our experience this jelly has proved valuable in nonspecific vaginitis and in cervicitis, as well as in some cases of trichomonas. The results were also satisfactory in cervical erosions and vulvar and urethral irritations. The buffered acid jelly brings quick relief, and after a few trials the patient finds the method quite simple even during the period of reduction of jelly applications to twice daily.

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HEADACHES*

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Headache is a symptom which may harass the patient, send the attending physician searching along the highways of all the systems and openings of the body, and make millionaires out of the pharmacists who can cause phenacetin and salicylic acid to fizz and bubble into the press and radio.

It is worth while, I believe, occasionally to review the facts and theories which surround some minor ailment. By discussing these, we can keep abreast of changing ideas and properly evaluate newborn fads of treatment. It may be well here to review certain fundamental facts relative to the mechanism of pain production in the head. Certain structures react to stimuli with the sensation of pain: (1) the skin of the scalp and the mucous membranes of the nasopharynx; (2) the muscles of the head and neck which are aggravated to painful perception after long periods of tension, or sudden violent contractions; (3) the bones of the skull, by injury or disease of the mastoid or paranasal sinuses, and finally the (4) dura. The dura has a generous nerve supply from the fifth cranial nerve. Pain is elicited by stretching, inflammation, or irritation of this structure. The pia and arachnoid have no nerve supply other than their own blood vessels and their associated nerve fibers. The brain itself is insensitive. The pain associated with disease of the gasserian ganglion is clear cut and does not come under the discussion of headache. After a lumbar puncture, the headache is supposedly due to stretching of the tentorium subsequent to release of the spinal fluid. Elsberg, however, believes it due to lowered pressure within the third ventricle and upon the optic thalami which form the ventricular walls.

In approaching the problem clinically, it is necessary to learn from the patient all the facts about his complaint. The character of the pain may be throbbing, constant, lancinating, or perhaps described by some pet term. The site of the pain is sometimes all over the head, but often is unilateral, frequently is over the occipital region, or may be elsewhere. The time of the day of occurrence of the headache is quite important, as is the periodicity, the duration, the relationship to meals, worry, menstrual cycle, colds, and use of the eyes. One should always question concerning the association of allergic disease; the history of headache in the family; the habits of the patient, relative to overfatigue, the use of coffee, tobacco, or alcohol. Occasionally the cause of the headache is due to the taking of coal-tar drugs, particularly those containing phenacetin, with the production of sulphemoglobinemia,[1] of which bromoseltzer is such a great offender. The past history of a sunstroke or head injury is important. These are only a few of the facts that have to be investigated.

No phase of the general physical examination can be neglected in the study of the individual concerned, and, indeed, often extensive laboratory data must be obtained before a clear-cut interpretation of the situation can be obtained. As a working approach to the problem, one must try to separate the headaches due to organic causes from those of functional origin. There are two approaches to this—one is by the method of exclusion, the other is by the direct method of adding up the evidence to a definite conclusion. That is, the individual is studied carefully, no organic disease can be found, and thus having excluded organic disease, the cause must be on a functional basis. It is well to remember, however, that the reliability of any diagnosis reached by the exclusion method is directly proportional to the capability and experience of the examiner. For example, an enlarged heart may be due to the very rare syphilitic myocarditis, only after valvular disease, hypertension, beriberi, hyperthyroidism, thoracic deformity, arteriovenous fistula, pericarditis, and coronary artery disease have been excluded; but one certainly feels more confidence in his interpretation of the cause of cardiac enlargement when, for example, a definite aortic regurgitation exists. Similarly, there is a direct approach to the diagnosis of a functional disorder. The psychiatric approach may be as direct, as logical, and as sound as the putting of two and two together in the interpretation of organic diseases. Therefore, the distinction between the organic and the functional types of headache is often a major problem. It is easy if the mother-in-law's periodic visit is associated with periodic headache in the son-in-law; if the headache occurs every time a lawyer approaches a court trial, or an athlete a major contest. However, these easy examples are not often met with, since the patient himself can analyze such simple symptoms and the headache ceases to be a problem.

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*Read before the Davidson County Academy of Medicine, May 19, 1942.

It is more difficult when the personality involved is more secretive, more complex, and more reticent. Unearthing the background of the disorder, in this more complex group, taxes the time, patience, and understanding of the investigator.

Sir Edmund Spriggs,[2] in the Croonian lectures for 1935, delivered before the Royal College of Physicians, analyzed 500 case records of patients admitted to one hospital with the complaint of headache. The ratio of women to men was three to one. About five per cent had organic intracranial disease, ten per cent were on a vascular basis, fourteen per cent due to a toxic cause (nephritis, allergy, menopause, anemia, alcohol, and tobacco), thirty per cent due to referred pain from the muscles of the neck, the cervical spine or referred from the abdomen through the vagus nerve. Over forty per cent were due to functional disease, under which he included migraine.

The headache of functional origin is usually described in words of such generous description that at once one becomes suspicious. The headache is described as utterly terrible and unbearable and the exaggerated terms are in themselves the key to the diagnosis. If there is added the story of absolutely continuous pain, the location at the top of the head or the back of the neck, the shifting of the location from day to day or hour to hour, the lack of any relationship to physical exertion, the aggravation by emotional upsets, the disappearance of the headache when adequate distraction is furnished, then can one be more certain that the pain is of a functional type. However, one should always bear in mind that the headache may not be a completely innocent one, but may be an early symptom in the general picture of a major psychosis such as schizophrenia, or melancholia, or a depression.

Granted that it can be decided that the headache is not due to a functional disorder, the next step is to distinguish between the organic symptoms due to intracranial disease and those due to extracranial disorders. The former are by far the easiest type to locate. Naturally, a brain tumor is always to be reckoned with. We know that there is nothing completely typical about the headache of brain tumor, and often large tumors are seen without an accompanying headache. The occurrence of the headache depends usually on the relationship of the tumor to the dura or to the cerebrospinal fluid passageways. It also varies with the character of the tumor, the rapidly-growing, relatively non-infiltrating type being associated usually with severe headache. When headache does occur in association with brain tumor, careful examination of the fundi and a general neurological examination usually place the diagnosis, although skull plates and ventriculogram may be necessary. It is also not necessary to elaborate on discussion of the headache due to meningeal irritation, the headache of subarachnoid hemorrhage, or those due to pathological calcification within the skull.[3]

A common intracranial cause of headache is seen in association with cerebral arteriosclerosis. Often there is an associated hypertension. The headaches are usually of the dull, frontal type. Evidence of arteriosclerosis is easily detected. Perhaps under this intracranial group should be placed the post-traumatic type of headache. The history of previous injury is there if sought for. The headache is usually a constant one, severe in intensity, frequently associated with personality changes, abnormal behavior patterns, dizziness, weakness, tremors, and failure of memory. So often these individuals have been labeled psychoneurotic. We should remember that serious organic brain disease has occurred, and encephalograms will often reveal the extent of the cortical damage.

Case of M. W.: I remember M. W. as a third-year medical student. I was the resident at that time, and it was my lot to see that the clinical clerks did their work. M. W. was always behind, seemed to be disinterested, was a daydreamer during clinics and teaching rounds. He was always the subject of discussion at staff meetings, and we were always wondering whether we should give him a failing grade. He finally graduated in 1934. I saw nothing more of him until 1939. At that time he was here on a visit, and the resident physician thought that he acted so peculiarly that he asked Doctor Mahoney to see him. The story which was then unfolded for the first time was as follows: M. W. had done excellent work during his first two years in college. In 1929 he fell from a horizontal bar in the Vanderbilt gymnasium, was knocked unconscious momentarily, and was dazed for hours. Following this, he developed a dull headache, which was constant and most annoying. He noted that the less he did the less headache he experienced. His memory began to fail, and he was unable to concentrate. He began to fear that his incompetency would be discovered, so he withdrew more and more to himself. He was barely able to pass his third year of academic work. While in medical school, he recognized the change in his personality, but on reading descriptions of dementia praecox and other major personality disorders, he did not feel that he should be considered a psychopathic individual. The headaches increased in severity. They began at the back of the neck and extended forward to the eyes. He became sleepy and irritable.

After graduation, he went to California and interned. He later married and went into practice. For two and a half years he did very well. However, the headaches not only continued, but gradually became more severe. He began to neglect his practice and his wife. At this stage, he decided to visit Vanderbilt again, and it was at this time that Doctor Mahoney saw him. The physical and neurological examinations were negative. The personality changes could not be interpreted as a major psychosis. Doctor Mahoney did an encephalogram and was able to demonstrate evidence of atrophy in the left temporal region. There does not seem to be any doubt but that this individual was suffering from a post-traumatic type of headache. This injury, associated as it was with definite extensive brain damage, caused him to be unjustly belabored by his teachers and misunderstood by his friends and his wife. The key to the diagnosis was in the history.

The mechanism of the headache of constipation is not definitely known. However, this is one of the obvious causes of headache, and the relief from headache after an evacuation of the bowel is often amazing in its promptness. It is probably a reflex type of headache mediated through the vagus and obviously, because of the quickness of relief, is not due to the absorption of toxins from the bowel.

Headaches due to eyestrain, sinusitis, and allergic disorders require no elaboration. The headaches due to the acute infectious diseases and acute intoxications, likewise, are common, are easily recognized and treated, and are probably due to alterations in the cerebrospinal fluid pressure with subsequent changes in the stress on the intracranial blood-vessel walls. The same explanation may very well exist for the headache noted in individuals with hypertension and hypotension. Headaches in association with hypertension are indeed very common. There are different ways of treating them, but sometimes all ordinary methods fail. Consider the case of Doctor P. He is forty years old. He has had hypertension for fifteen years. Headache became so bothersome that we systematically tried every treatment that either of us read, or heard, about. None proved of any help whatsoever. His blood pressure was at a level of 230/150. There was no sign of uremia. Finally, at another's suggestion, he went to the University of Michigan. There a supradiaphragmatic sympathectomy was carried out. To his amazement, the headache was gone when he recovered from the anesthetic. Since then, nine months ago, he has been jubilantly free of headache. However, his blood pressure has not been lowered by the procedure.

The headache of hypoglycemia is on a nutritional basis, as is the headache associated with anoxemia.

Erythromelalgia of the head is a new syndrome described in 1935 by Horton, MacLean, and Craig.[4] This is a unilateral type of headache without hereditary incidence or an early history of migraine. It is sudden in onset, throbbing in character, tends to awaken the patient at night, is eased by the erect, or sitting, position, and is usually associated with unilateral lacrimation and stuffiness of the nostril. It is often precipitated by the drinking of alcoholic beverages. There are no visual or gastrointestinal features as seen in migraine. This type of headache is considered to be due to a sensitivity to histamine. It may be precipitated by the injection of as little as three-tenths milligram of histamine. The disease may be cured by desensitization to histamine as advocated by Horton.

I wish to devote a little time to the discussion of migraine. Although headache is a feature of migraine, we must remember that migraine is an hereditary disease, with the occurrence of headache being only one of the features of the disorder. The headache is due to the changes in the brain, or nervous system, which result in dilatation of certain meningeal vessels.[5] This increased vascularity with tension in the pia and stretching of the vessel walls results in headache. The headache is, characteristically, a unilateral one; is periodic in occurrence; is frequently preceded for hours by aura, which may be cutaneous, or related to the gastrointestinal tract; it is severe; it is associated with the occurrence of scintillating scotomata, lapses of memory, nausea, vomiting, and prostration. The attacks are usually brought on by excesses of emotion, eating, or exertion; they tend to become milder as the victim grows older and frequently disappear in women after menopause.

In some the headache can be relieved by mechanically reducing the flow of blood in the meningeal vessels, by pressure on the carotid or temporal artery, and in almost all instances of true migraine, the headache can be aborted if treated early, or cured if treated after its development, by the use of ergotamine tartrate. This drug probably acts by causing the contraction of the dilated arteries and decreases the tension on the vessel walls and on the dura. If untreated, the attack will last for hours and frequently for days. In studying this problem, although one may X-ray the teeth, sinuses, and gall bladder, skin test for allergic reaction to foods, do basal metabolism rates, gastric analysis, refractions, and liver function tests, rarely is the cause discovered and the disease cured. More often a careful study of the patient's problems will help the doctor work out a plan whereby certain trigger-mechanisms such as worry, fatigue, and excess use of tobacco may be avoided. Various methods of treatment have been advised; different types of diet, the use of bromides, pituitary extracts, potassium thiocyanate, and many others. The thiocyanate salts may help if the individual also has hypertension, and, of course, many sufferers from migraine develop hypertension. However, this at once suggests that the hypertension is more important as the causative agent than true migraine. Recently the use of thiamine chloride in large amounts has been advocated by Palmer.[6] He was impressed by certain nervous manifestations reported by Peters[7] in his nutrition experiments with vitamin B_1. Palmer felt that migraine might well be due to some metabolic upset consequent to a vitamin B_1 deficit. He treated forty-eight patients with massive amounts of thiamine chloride and reported cures in twenty-three. An additional fourteen were helped. The fact that only 58.8 per cent of the forty-eight patients had been helped previously by injections of ergotamine tartrate gives justifiable reason to question the accuracy of the diagnosis of migraine.

I wish to record its use in one case since the control period has been so long and the results of treatment with thiamine so excellent. A. W., a physician, at the age of thirty, began to have characteristic seizures of migraine. His mother had the disease also, but it disappeared after the menopause occurred. He did nothing about it at first, but the attacks became so severe that he was forced to diagnostic and therapeutic effort. Sinuses were X-rayed as well as the gastrointestinal tract. Physical examination, complete blood counts, the usual blood chemistry tests, and a basal metabolism test were normal. Skin tests deprived him of tobacco, chocolate, coffee, and radishes, but the headaches continued. Finally, he found that when he had the sensation of a ballooning head, scotomata, nausea, lassitude, and generalized aching, if he injected .35 to .5 cubic centimeters of ergotamin tartrate, then within two to four hours he was well. At intervals he would delay the injection, telling himself that he was too quick to treat, and that the attacks would subside spontaneously. Each time he did this he would have a terrific attack and would be forced to bed. Although overwork and worry occasionally brought on his attacks, he had them while on temperate vacations, or when relaxed on the week end, and, indeed, would often be awakened from his sleep with a severe attack. He finally would never leave town without a hypodermic kit and the gynergen. Naturally, all new forms of treatment were tried. The inhalation of 100 per cent oxygen was effective in the treatment of the attack, but was not very practical. He desensitized himself to histamine without benefit. Recently, he read about the use of thiamine chloride in the treatment of this condition. This was started first by hypodermic, twenty-five milligrams twice daily for ten days, and since then ten milligrams by mouth twice daily have been taken. Treatment was started the last week in February, 1942. A severe attack was experienced February 28. Since then there has occurred only one mild attack, and it was easily relieved by aspirin. A careful diary of attacks indicates that there were sixteen attacks in 1937, eighteen in 1938, nineteen in 1939, twenty-one in 1940, and thirty-three in 1941. Four were endured in 1942 up to the institution of the thiamine treatment, that is, in short, he was having an attack about every ten to fourteen days. This freedom from attacks now extends over a period of eleven weeks. One case, of course, proves nothing, but it is no doubt better than ten cases loosely studied, and I merely offer it for what it is worth.

Finally, I realize that I have not covered all the possible causes of headache, nor have I mentioned in detail the various ways of relieving the pain. No doubt, each of you has particular interest in some type of headache which I have neglected. Therefore, I repeat in closing, that the purpose of this paper was simply to bring before you certain aspects of a minor ailment. The better the understanding of such a problem, the more grateful will be the appreciation of our patients.

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SOME SIGNIFICANT ACHIEVEMENTS IN PUBLIC HEALTH*

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The revolutionary changes which we are experiencing at the present time from a social, an economic, and a political standpoint are doubtless having a profound influence upon the life of almost every individual in civilized countries. There was probably never a time when more thought was given to analyzing the significance of this influence in national and international relationships. Although it is not generally realized, there is no phase of human effort which is causing greater change in the lives of people than the rapid advance in our knowledge of medical science. This has made possible the conquering of many communicable diseases in our time. These advances have been the cause of improving the standards of individual health and physique of the average person to a degree heretofore unknown, of reducing mortality rates, and of increasing the average expectancy of human life approximately fifteen years since the beginning of the twentieth century. These achievements have been universally beneficial to mankind, and they have not been secured by one nation at the expense of another, but are the result of the finest kind of cooperation, in an effort to add to our knowledge and experience for raising the standard of health and for increasing the efficiency of man.

The advances in public health are the outcome of knowledge acquired through research in the physical and biological sciences, and as a result much more effective facilities have been provided to combat diseases and to protect individual and community health. The long series of brilliant discoveries which occurred as a sequence to the enunciation of the germ theory of disease about 1870 is the underlying cause of the remarkable progress achieved in control of the infectious diseases during the past fifty years.

Therefore, any scheme of public health administration, however extensive or well-planned and regardless of the amount of money available, will largely depend for successful operation upon knowledge obtained in the laboratory, at the bedside, and in the field. If this knowledge is adequate, the practice of public health should prove a success, if deficient, unsuccessful. Even though one may begin without dependable information, gradual improvement in public health practice may be effected through increments of knowledge gained as a result of further research. Therefore, it may be emphasized that our approach to public health problems should be well-planned and justified on the basis of scientific facts, which can be applied through efficient administrative procedures.

One of the most progressive steps during the past decade was the establishment of the National Institute of Health and the absorption and transfer of the activities of the old Hygienic Laboratory of the United States Public Health Service in Washington to new quarters at Bethesda, Maryland. This was done in 1938. This inspiring achievement was facilitated by a gift of seventy acres of land by Mrs. Luke Wilson, on which six splendid buildings costing about $4,000,000 have been erected. This represents one of the greatest research institutes in the world. It affords a basis for the cooperation and coordination of research with universities, hospitals, voluntary health agencies, endowed institutes, and laboratories. Even beneficial international relationships may be established in an attempt to extend our knowledge of the pure and applied sciences of medicine and public health.

There has been remarkable progress in the techniques of public health practice in recent years. All official health agencies—federal, state, and local—have greatly enlarged their facilities. The advances in the administration of state and local health agencies have been greatly facilitated as a result of relatively recent advances in scientific knowledge. The county health demonstrations fostered by the great philanthropic foundations have been of inestimable value in improving the content and, especially, the quality of health service. Because of the results obtained, increased faith is being shown by public authorities in providing more adequate appropriations for federal, state, and local health agencies. In 1939 the regular appropriation of the United States Public Health Service, as compared with 1935, was increased more than fifty per cent. There was provided under Title VI of the Social Security Act for the fiscal year 1941 the sum of $13,500,000 for allocation to the respective state health departments for the expansion of the health program, for the training of public health personnel, and for research. Through Title V of this Act, the Children's Bureau was also provided with $5,820,000 for maternal and infant health, which has been used in cooperation with state and local health agencies. As compared with 1935, the total appropriation in forty-one states, including the District of Columbia, was increased approximately forty-six per cent in 1938. This is exclusive of funds which were made available by county and city authorities. Then there must be included the donations that have been generously provided by philanthropic agencies for the advancement of medical science and public health—donations which, it is estimated, have been at least $35,000,000 during the period from 1930 to 1936. These data emphasize two points: first, the rapidly-growing interest concerning the health of the nation; and, second, the stimulus resulting from increased federal funds which have not been used in place of, but as supplements to, the increasing appropriations of state and local health agencies.

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*Read before the Nashville Academy of Medicine, December 1, 1942.

ADVANCES IN THE CONTROL OF HUMAN DISEASES

The bacteriologist, immunologist, and pharmacologist have carried on investigations, particularly in the applied aspects of preventive and curative medicine. Through their studies we have been able to control either by prevention or cure many infectious diseases by the use of toxins, toxoids, antitoxins, vaccines, antisera, and chemical agents. This fact is shown by the amazing decline in cases and particularly in deaths from diphtheria.

The record shows that the death rate in the United States Registration Area from diphtheria has been reduced from 13.9 in 1918 to 1.1 per 100,000 population in 1940, which is a decrease of ninety-two per cent. Beginning with the discovery of antitoxin by Behring in 1890 and its use for specific treatment, many discoveries have been made which provide powerful weapons for the control of this disease, such as the Schick and virulence tests, toxin-antitoxin, toxoid, and alum-precipitated toxoid. Available knowledge is now sufficient to control diphtheria, and, in general, this disease is rapidly becoming a negligible health problem. To this may be added the relatively recent discovery and extensive use of toxoid, alum-precipitated, for the prevention of tetanus. How fortunate we are to have this invaluable preventive agent, particularly at this time!

Reference should also be made to the marked advances in our standards of personal cleanliness and general sanitation. As a result of the newer knowledge, particularly in bacteriology, immunology, and parasitology, such diseases as cholera, bubonic plague, typhus fever (endemic and epidemic), and yellow fever, which have killed thousands and tens of thousands of people, are now under control in many civilized countries. The triumph of science over yellow fever is one of the most reassuring accomplishments in preventive medicine. The discovery of the immunity test and the production of a vaccine for the prevention of this disease is a monumental contribution.

The Housing Act became effective in 1937. Through this slum-clearance measure hundreds of thousands of people are living today under better environmental conditions. A Committee on Housing of the American Public Health Association was created about three years ago, and through its leadership and effort valuable contributions have been made toward the advancement of this constructive and beneficent movement.

The marvelous results in the control of

the so-called "filth-borne" or enteric diseases, such as typhoid fever, hookworm, and bacillary dysentery, are epoch-making achievements. In 1920 the number of deaths reported from typhoid fever in the Registration Area of the United States was 6,805 and there were approximately 70,000 cases. Today the records show that the number of cases is approximately 9,809 and the number of deaths reported is 1,439, which is a reduction of 85.9 and 78.8 per cent, respectively. Typhoid fever is now a minor health problem, and an outbreak at present may well be regarded as a serious reflection upon any civilized community.

The steady decline in morbidity and mortality from tuberculosis is the result of many factors, social and economic, such as better standards of living, improved housing conditions, shorter hours of labor, improved industrial hygiene, a more efficient checkup of immigration racial groups, and better education of the public. Today the death rate from tuberculosis is 45.9 per 100,000 population, which is only one-fourth of what it was in 1900. The increase in our knowledge concerning the diagnosis, treatment, and prevention of tuberculosis has been the basic factor in its control. Collapse therapy and its more general effective application are now not only of great value in the healing process of the lung, but the patient ceases to become a source of infection to others. The emphasis on case-finding procedures by the use of the tuberculin test and especially by the X-ray examination of positive reactors and contacts in families and in community groups is probably the most important element in the future tuberculosis control program. The clear-cut implications in our efforts to prevent tuberculosis are early diagnosis, adequate treatment, and efficient public health nursing service. There is no reason why this disease should not be brought wholly under control within the next generation.

One of the three most important health measures passed by Congress in the past decade was the Venereal Disease Act in May, 1938. This appropriation has been increased from $3,000,000 in 1938 to approximately $13,000,000 for the fiscal year beginning July 1, 1942. The Federal Public Health Service in cooperation with the respective states has developed a well-planned nation-wide program which, if continued over a long period of time, will make it possible to reduce these diseases to a negligible degree. The discovery of Ehrlich, who introduced organic arsenical compounds for the treatment of syphilis in 1910, the more effective use of mercury and bismuth, and the success which has recently been attained in the use of sulfapyridine and especially sulfathiazole in the treatment of gonorrhea will greatly facilitate the prevention and cure of these infections.

During the fiscal year ending July 1, 1939, the number of clinics for the diagnosis and treatment of venereal diseases increased more than thirty per cent. Practically every state and territory at present gives aid through clinics for the diagnosis and treatment of syphilis and gonorrhea. In the first year of the campaign, that is, 1938, approximately 200,000 new patients were treated in clinics, and in 1939 the number was increased by fifty per cent. During the same period of time the number of treatments increased from 5,000,000 to 8,000,000. These gains have been steadily increased.

We know that accuracy in diagnosis and thoroughness in the technique of treatment of venereal diseases have been greatly improved, and the newer knowledge is being more uniformly employed by practicing physicians and by health agencies. As many as twenty-five states now legally require medical examinations, including serologic tests for syphilis, of all those who apply for licenses to marry, and eighteen states require that physicians make blood tests in approved laboratories on all expectant mothers. Thus, there is universal interest and support in the effort which is being made by physicians and health authorities to remove this "shadow on our land."

With the changing age composition of the population, the problem of degenerative diseases is assuming major significance. We know that the gains in the length of human life are chiefly the result of the prevention and control of disease and of raising the standards of health in the population under twenty years of age, particularly during the very early years of life. The number of people in the older age group is gradually increasing, and, therefore, diseases of the heart and blood vessels, cancer, nervous diseases, and other chronic disabling conditions will assume much greater importance during coming years in hospital wards. Obviously this change in our hospital population will have a far-reaching effect upon changing the type of medical practice.

In line with this population trend, the National Cancer Institute Act became effective in August, 1937, which authorized an appropriation of $750,000 for a building and $700,000 per year for current expenses. This is the most forward-looking step which has been taken by any civilized country in dealing with this very difficult problem. Available knowledge at this time is inadequate to deal with this problem in the most successful way. The Federal Public Health Service has wisely established a research institute, which is the logical approach in dealing with this enigmatic disease. The control program at present depends upon early diagnosis and skillful treatment of cancer by surgical procedures, including the use of radium and X-ray therapy.

There is urgent need for a better understanding of the dosage of radium and X-ray which would be most conducive to its arrest and cure. To this end, the National Cancer Institute has purchased eight grams of radium, which is available to approved cancer clinics with the provision that no charge shall be made in its use, and a fellowship plan has also been developed for training physicians in the best methods of diagnosis and treatment of cancer. Emphasis is also being placed upon a statistical study of the prevalence and the results in treatment of cancer, and much progress has been made in collecting valuable data. This is a national health problem, and is, therefore, being dealt with on a cooperative and coordinated basis with medical schools, hospitals, research institutes, and practitioners of medicine.

One of the significant contributions in our time is the production of synthetic drugs for the treatment of the symptoms and cure of disease. Such drugs have been provided for the cure of malaria and other tropical diseases. The discovery of sulfanilamide and its derivatives probably represents the greatest advance in chemotherapy during the past fifty years. These agents have a remarkable effect upon bacteria which cause such diseases as epidemic meningitis, erysipelas, pneumonia, trachoma, gonorrhea, and also sepsis of childbirth. Amazing results have been achieved during the last few years by the use of sulfapyridine and particularly sulfathiazole in the treatment of pneumonia. Although this is a valuable addition to our knowledge, emphasis is being placed upon continued research to determine the relative value of sulfanilamide derivatives and specific sera upon the thirty-two types of pneumonia organisms. Because of these achievements, as many as forty states and two territories are now conducting pneumonia-control programs.

In passing, mention should also be made concerning the progress in our knowledge of hormones and modern methods used in the treatment of diabetes mellitus with insulin and of pernicious anemia with liver extract. The various sex hormones also have proved exceedingly beneficial in dealing with certain functional conditions of men and of women. These substances have been of incalculable value in improving and in maintaining the health of thousands of individuals.

A committee of qualified obstetricians studying the histories of 2,041 maternal deaths which occurred in New York City in 1930-32 came to the conclusion that about two-thirds of these might have been saved if they had received proper prenatal, natal, and postnatal care. We know that the major cause of maternal deaths is due to the introduction of pathogenic bacteria by attendants into the birth canal usually prior to or during labor, and that streptococcal organisms are responsible for a large percentage of such infections. Only within recent years have the deaths due to childbirth been reduced. This reduction has been brought about by better prenatal and postnatal care, more skill and better facilities in obstetrical practice, and emphasis upon the educational program for expectant mothers. Probably at no stage in the world's history has it been possible for women to bear children with less danger to themselves and with greater certainty of giving birth to healthy babies and with more assurance that these babies will attain a good age with better health and physique than at the present time.

There has been also steady improvement in infant care and the health standards of the preschool and school child. The infant death rate per 1,000 live births was approximately 100 in 1915, and it has been decreased to 45.9 in 1938, which is a reduction of 54.1 per cent. Available data show that approximately fifty per cent of these deaths occurred during the first month of the neonatal period and a large percentage of these during the first week of life. Our knowledge of the factors causing infant deaths has become increasingly greater, and there is every reason to believe that the number of deaths that occurred in 1940 (actually 113,675) can be reduced in reasonable time at least forty per cent.

Since the discovery of the vitamin element in food about thirty years ago, rapid advances have been made in our knowledge of diet in health and disease. As a result of studies in the field of physiology, biochemistry, and clinical medicine, we know why certain foods have a preventive value in nutritional deficiencies and disease. It is also possible to determine in a more accurate way the adequacy of one's food supply. Specific laboratory tests and better clinical methods are now available to determine nutritional deficiencies, and specific remedial measures may be prescribed. Such conditions as scurvy, rickets, beriberi, pellagra, and night blindness have been successfully prevented and cured because of the new science of nutrition. The recent discovery of nicotinic acid is of incalculable value in the cure of pellagra. Our ideas of feeding have also been revolutionized, especially of the infant and growing child.

I should not conclude this paper without reference to the health of the worker in industry. This is more fully appreciated today. In 1940 there were more than forty industrial health units in thirty states and two territories. The United States Public Health Service has allocated to the respective states funds for expanding this program. There is a growing appreciation of the economy in protecting the health of workers in industry apart from its great humanitarian implications. We are better informed concerning problems of occupational disease and the techniques that should be employed in diagnosis, treatment, and prevention of industrial hazards. A Division of Industrial Hygiene has been organized recently in the National Institute of Health. In a majority of the state health departments, bureaus of industrial hygiene have been organized since 1935. This phase of public health is being expanded, especially at present, as an essential factor in national defense or a war measure.

Another most significant achievement in public health is the establishment and rapid expansion of full-time county or district health service in the respective states. In 1915 there were only fourteen full-time local health departments, exclusive of cities. Beginning with 1935 there has been a large increase in number. By June 30, 1941, there were 1,669, which is fifty-four per cent of the 3,070 counties in the United States. These full-time county health departments were classified into (1) single county units, (2) the local district unit, composed of two or more counties, and (3) the state district unit, comprised of many counties.

A point of special interest is that the combined population of the 1,669 full-time county health services, including 103 cities, represents approximately seventy per cent of the total population of the forty-eight states, including the District of Columbia. The areas remaining unorganized are chiefly those counties in which the population is relatively sparse and in which economic conditions are poor.

These facts are mentioned to emphasize an exceedingly progressive trend which has been uniformly supported and greatly facilitated by the organized medical profession. Otherwise, this splendid result would probably not have been accomplished.

Another problem should be emphasized, and that is to accentuate the effort which is being made by state health agencies to provide qualified personnel by some kind of merit system. Much progress has been made in recent years concerning the training of health officers, sanitary or public health engineers, public health nurses, sanitation officers, and others who wish to specialize in public health as a career. Continual stress is now being placed upon the quality of public health service and the use of trained personnel by state and local health agencies. Experience shows that quality attracts quality and, therefore, the selection of well-trained personnel has an important bearing both in securing and in retaining qualified individuals by the local health departments. There is no one factor that will have more significance in stabilizing public health operations than the adoption of adequate standards for the employment of efficient personnel. This also will serve to strengthen the relation between the practitioners of medicine and official public health agencies.

Finally, may I refer to the great contribution which has been made by the practitioners of medicine individually and collectively in the advancement of public health. The medical profession represents a select group who often give unstintingly of their time and service for beneficent purposes. It is to them in cooperation with public health agencies that we must look for the continued application of the newer knowledge achieved through research in medical science for prevention and control of disease and the prolongation of human life. No richer heritage than this can be maintained by our profession, because I am firmly of the belief that the universal application of this knowledge will be the most potential factor in determining the destiny of the human race.

The position which American medicine has achieved, whether you view it from a purely scientific angle or from a combination of social and scientific aspects, never has been previously attained. There was never a time when our profession should be more realistic and deal with the changes which will confront us during the postwar period in a wise and constructive way. There will doubtless be many adjustments to be made, but I cherish the belief that the leadership of the profession will measure up full well to this responsibility. We must not lose the gains and values that have been established, but strive to attain a higher level of achievement in individual medical practice as well as in public service.

TREATMENT OF FACIAL FRACTURES*

WM. MILTON ADAMS, M.D., Memphis†

Within recent years, fractures of the maxilla have so increased in number that they have become a problem of serious importance. As is true of many other injuries, automobile accidents are largely responsible. Fractures most commonly result from head-on collisions or sudden stopping of the car, causing the patient's head to be thrown against the instrument board or steering wheel. They may vary in extent from a simple fracture of the alveolar ridge to a severe comminution of the maxilla associated with fractures of other facial bones.

Early recognition and care are essential in the successful management of all facial fractures. The importance of this fact should be more strongly impressed upon the medical students.

Diagnosis.—Before an appropriate plan of treatment can be outlined, the extent and direction of the displacement must be determined as well as the extent of injuries to the soft tissues. The diagnosis is much easier if the patient is seen before the soft tissues have become badly swollen.

Examination should include an inspection of the facial contour from every angle. Special attention to deformities usually gives one a clue as to the presence of fracture. In complete bilateral fracture of the maxilla, the displacement is usually downward and backward. This produces an elongation of the middle third of the face and enables the patient to bring only his molar teeth into contact. If the displacement is backward, the contour of the face is usually "dishpanlike," particularly if the nasal bones have been crushed. Fracture of the malar bone produces a flatness of the cheek, together with an irregularity of the infraorbital ridge. In unilateral fractures of the maxilla, the upper alveolar ridge is irregular, the teeth of the involved side are usually displaced downward, and the soft tissues of the palate may or may not be separated along the line of fracture. This separation is usually in the mid-line.

By careful palpation, one is able to note irregularities in the bony contour, the location of the fracture lines, and the direction of the displacement, and usually much more satisfactorily than is often possible from roentgenograms. Movement of the maxilla may be elicited by holding the upper teeth with one hand while steadying the head with the other. At the same time, one should watch closely for any movement of the infra-orbital ridge. The probability of an associated fracture of the skull and cervical spine should always be considered. Care should be taken in making requests for roentgenograms for determining these fractures, as routine films of the head and sinuses are frequently of little value, and the fracture lines can only be brought out by special views.

Treatment.—As soon as the patient's general condition permits, he should be taken to the operating room, and while the facial wounds are being treated, fluid loss should be replaced by intravenous medication, and, if necessary, transfusion of whole blood or blood plasma.

In the majority of cases, repair of the injuries may be carried out under a local anesthetic, either by infiltration or nerve block. If a general anesthetic is needed for manipulation of the bony fracture, sodium pentothal given intravenously serves the purpose quite well, since it affords the surgeon complete freedom from interference in carrying out the operation.

Lacerations, in many cases, afford an approach for reduction and immobilization of fractures, particularly of fractures of the malar bone and orbital ridge. In fractures of these bones without laceration, when there is difficulty in maintaining the fragments in proper position, one should not hesitate to make a small incision in the region of the orbital rim in order that the fragments may be wired in place.

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*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1942.

†From the Department of Plastic Surgery, University of Tennessee.

The anterior wall of the antrum, if depressed, may be elevated with a curved instrument, such as a male urethral sound, through an opening made in the nasal wall beneath the inferior turbinate. When the antrum is filled with blood and the patient has no history of sinus infection, one need not make a window in the antrum for drainage, as the blood clot in the antrum will usually liquefy and be absorbed or drain through the natural opening.

"Greenstick" fractures of the maxilla, after being reduced, frequently remain in place without any mechanical support. If the patient is edentulous and the fracture is reduced with sufficient accuracy to provide a normal external appearance, a dentist can build up the base of the dentures to compensate for any slight displacement. However, when upper and lower teeth are present, reduction of fractures must be most accurate in order to permit perfect occlusion of the teeth.

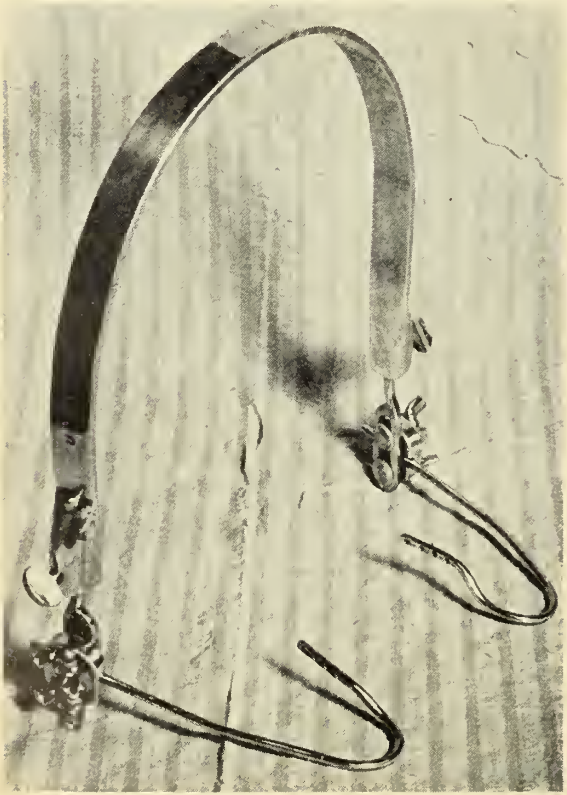
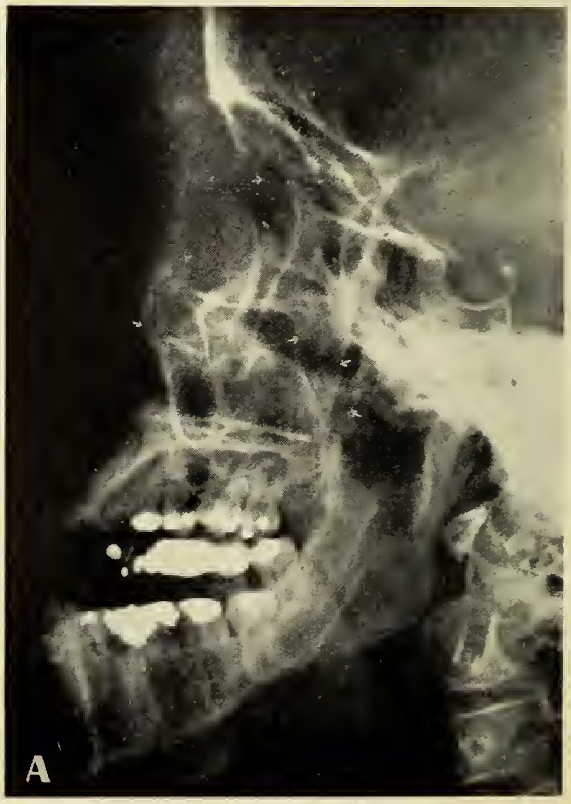


Fig. 1. The author's extra-oral appliance used in cases of fractures of the maxilla where open reduction and wiring fixation are contraindicated.

Many types of appliance and technic are described in medical literature for fixation of the maxilla, practically all of which employ the method of external fixation to a headcap. Extra-oral appliances are useful in cases of infection which might contraindicate open reduction. Although only partial immobilization of the maxilla is possible with an extra-oral appliance, satisfactory results can be obtained by this method.

CASE REPORT

Case I.—(Illustrating the use of the author's extra-oral appliance. Fig. 1.) White male, aged thirty-seven years, was in an automobile accident, in which he received a fracture of the base of the skull and contusion of the brain, together with a crushing injury of the facial bones. Due to the severe brain injury, the neurosurgeon felt it unwise to do any manipulation of the facial fractures until ten days later, at which time examination revealed face still markedly swollen with an elongation of the middle third. Entire maxilla was quite movable. Patient had a complete bilateral fracture of the maxilla with downward and



backward displacement and fracture of the nasal and malar bones and the infra-orbital ridges. (Fig. 2.)

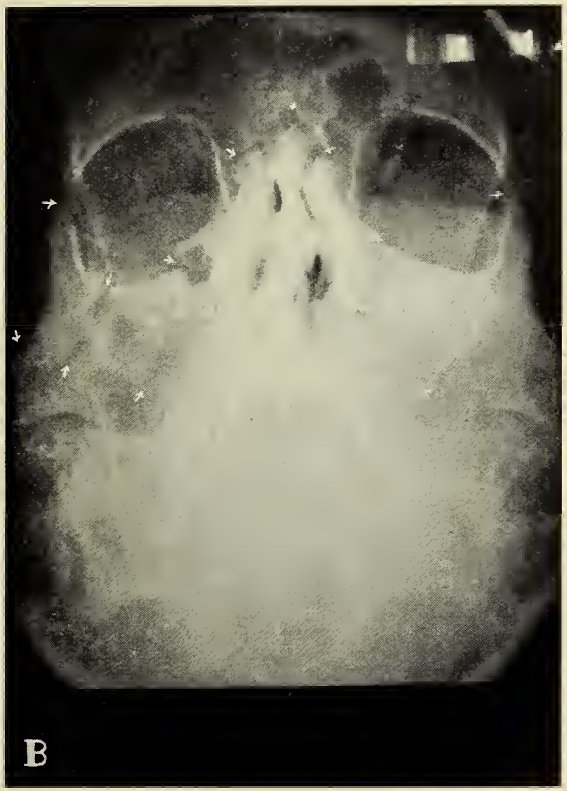


Fig. 2-A and B. Lateral and P. A. preoperative roentgenograms showing bilateral, horizontal fracture of the maxilla with backward and downward displacement. Crushing fracture of all nasal bones. Downward displacement of the infra-orbital ridges. Fracture of the right zygoma with gross displacement downward and backward. Arrows designate main fractures.

A headcap was applied, incorporating a heavy archband over the vertex. Castex was used in the place of plaster of Paris, since it is much stronger, lighter in weight, and more comfortable to the patient. Wires were placed around the molar teeth and attached to the extra-oral bars. The maxilla was elevated to its normal position, and while supporting the upper jaw with the lower jaw with teeth in occlusion, the extra-oral bars were fixed in position to the metal archband over the head. The infra-orbital ridges and malar bones were elevated with a male urethral sound, through the nasal-antral window under the inferior turbinates, together with external manipulation. (Fig. 3.) The nasal fractures were reduced and held in place with through-and-through sutures over small lead plates on either side of the nose, which were removed in ten days. Patient wore the extra-oral appliance six weeks. (Fig. 4.)

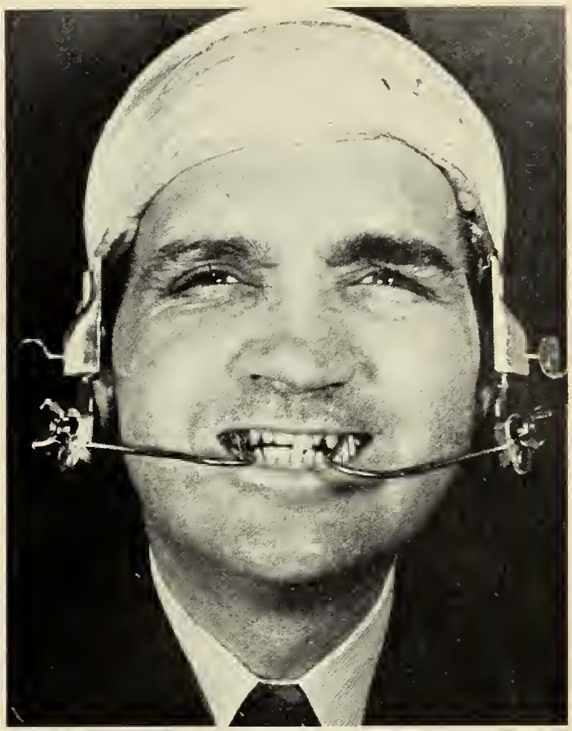


Fig. 3. Patient wearing extra-oral appliance attached to upper teeth and headcap.

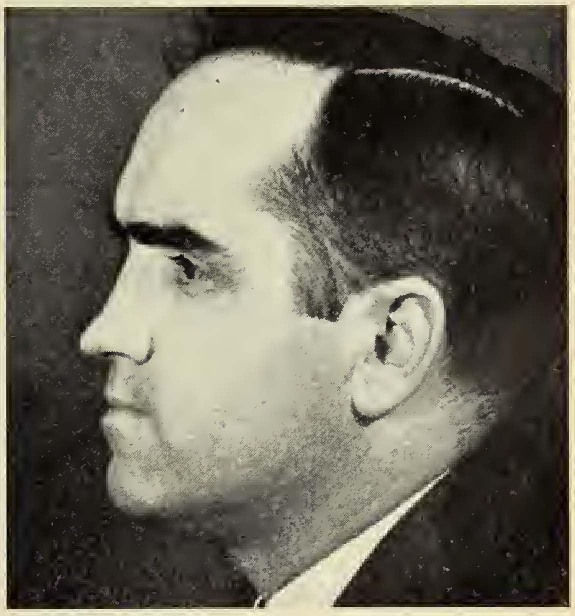


Fig. 4. Patient six months postoperative.

Up until the past two years, the extra-oral appliance described was used almost exclusively in all complete bilateral fractures of the maxilla. Since that time, facial fractures have been handled routinely by open reduction and internal wiring fixation. Although, in a few cases, open reduction was delayed a week or ten days because of infection. It was felt that this delay was justifiable so that internal fixation might be carried out since it assures better end results, as it gives complete immobilization compared to only partial immobilization with the use of an extra-oral appliance. The patient is also spared the discomfort and inconvenience of the headcap and readjustments are not necessary. Only a minimum amount of equipment is needed—a pair of pliers, a small drill, dissecting set, and a spool of small, stainless steel wire.

Only two anatomical points of entrance are necessary for the insertion of wires for fixation of any fractures or combination of fractures of the facial bones—a small incision over the infra-orbital ridge or a small incision at the lateral aspect of the supra-orbital rim just above the zygomatico-frontal suture line.

In a simple, complete bilateral fracture of the maxilla, the infra-orbital ridges are used as the points of fixation. The maxilla is held in position with wires extending from the upper teeth to the infra-orbital ridges. Points of fixation should be either lateral or medial to the infra-orbital foramen to prevent pressure on the nerve.

In the case of associated fractures of the infra-orbital ridges and nasal bones, a sufficient number of these fragments should be immobilized by separate wiring to the malar bone to maintain the normal contour of the infra-orbital ridge. The nasal fractures may be handled in a routine manner.

With associated fractures of the malar bone, one has to go higher for the point of fixation. In this case the zygomatic process of the frontal bone serves the purpose. The holes are drilled just above the fracture line and the wires are then passed down behind the malar bone beneath all the soft structures of the face, making its exit in the upper sulcus of the mouth. After elevation of the maxilla to its normal position, the wires are tied around the upper teeth.

In case of fracture of both the upper and lower jaws, the maxilla is first immobilized to one or more of the unfractured bony parts above, after which the upper teeth may be used as the point of fixation for the fractures of the mandible.

Case II.—(Illustrating open reduction and internal wiring fixation.) W. W., white male, aged fifty-two years, was lying on the floor, working on the rear axle of a car, from which the wheels had been removed, when the jacks slipped and the axle fell across his face. He was admitted to the hospital four hours later, suffering acutely and in a state of mild shock. Pantopon was given, and the routine treatment for shock, including glucose intravenously.

On inspection, all the soft tissues of the face were grossly swollen, the eyelids being almost completely closed from edema. The middle third of the face was elongated from displacement of the maxilla inferiorly and posteriorly; the orbital rim was elongated vertically from a downward displacement of the infra-orbital ridges; there was a comminuted fracture of the nasal bones; and the malar bones were depressed. On palpation, it was apparent that all the facial bones were crushed. In addition, there was a fracture of the mandible just above the angle on the right, with anterior and lateral displacement of the posterior fragment. (Figs. 5-A and 6-A.)

Almost immediately following the emergency treatment, the patient had a severe rigor, followed by a temperature of 105 degrees, and it was felt unwise to manipulate the fractures at this time. His fever subsided under treatment with sulfanilamide, and two days later reduction and immobilization were carried out under local anesthesia.

The left malar bone was widely displaced, necessitating its separate wiring to the zygomatic process of the adjacent frontal bone. Small holes were then drilled in the frontal bone lateral to the orbital region just above the zygomaticofrontal suture line on both sides. A No. 25 stainless steel wire was threaded through the opening,

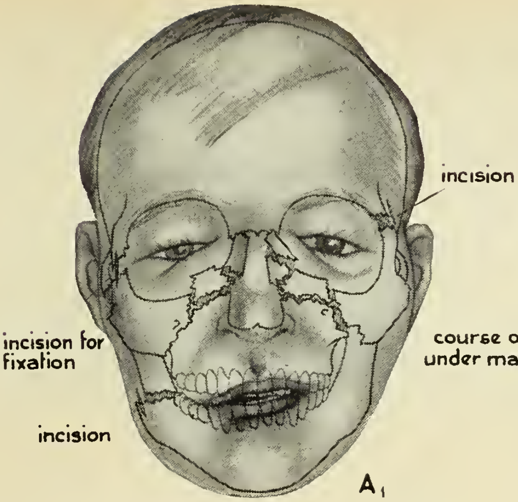


Fig. 5-A. Complete bilateral fracture of maxilla. Comminuted fracture of infra-orbital ridges and nasal wings. Fracture of both malar bones. Fracture of right mandible just above angle of jaw.

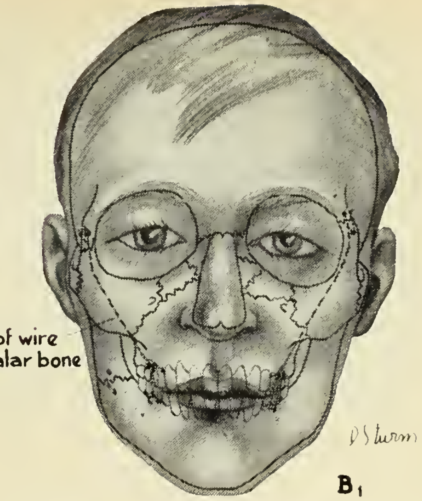


Fig. 5-B. Fracture of right malar bone reduced and wire passed from frontal bone behind body of malar bone and attached to upper teeth, fixing the maxilla and malar bones on this side. Same procedure repeated on left, and, in addition, malar wired separately to frontal bone because of gross displacement. Fracture of right angle of mandible fixed by open reduction and wiring. Upper and lower teeth wired in occlusion.

and the two ends of the wire were carried downward behind the malar bone and under the soft structures of the cheek into the upper sulcus of the mouth in the region of the first and second molars. After elevation of the zygomatic arches and malar bone, the soft tissue wounds were closed. Eyelet wires were next placed around the upper and lower molar teeth on both sides. The maxilla was then restored to its normal position, and the wires from above were drawn taut and tied to those about the teeth of the lower jaw. In this manner the teeth were held in occlusion, and, at the same time, the fractured bones were maintained in proper position. (Fig. 5-B.) The anterior wall of the antrum was elevated with a male urethral sound inserted through the nares, the nasal bones were replaced, the passages packed with vaseline gauze, and an external splint was applied.

Postoperative roentgenograms revealed the maxilla and other facial bones in good position. (Figs. 6-B and C.) The displacement at the right angle of the mandible, however, was still apparent. Since it was impossible to reduce and maintain this fracture in normal position by manipulation, an incision two centimeters long was made over the angle, and the bones were apposed and fixed with a No. 25 stainless steel wire.

During the first week oral irrigations were carried out hourly, supplemented by the use of oral pentacresol at frequent intervals. The patient had a slight temperature for several days, though this gradually subsided under treatment with sulfanilamide. He improved rapidly and was able to leave the hospital two weeks following his admission. The wires around the facial bones were removed in the office eight weeks postoperatively. Because of the fracture of the mandible, it was necessary to maintain fixation of the lower to the upper jaw for a longer period. The patient now has full motion of the lower jaw, both vertically and laterally, the teeth are in good occlusion, and the contour of the face is normal.

SUMMARY

In this paper two methods of fixation for fractures of the maxilla and associated fractures of other facial bones have been described: first, external fixation with the

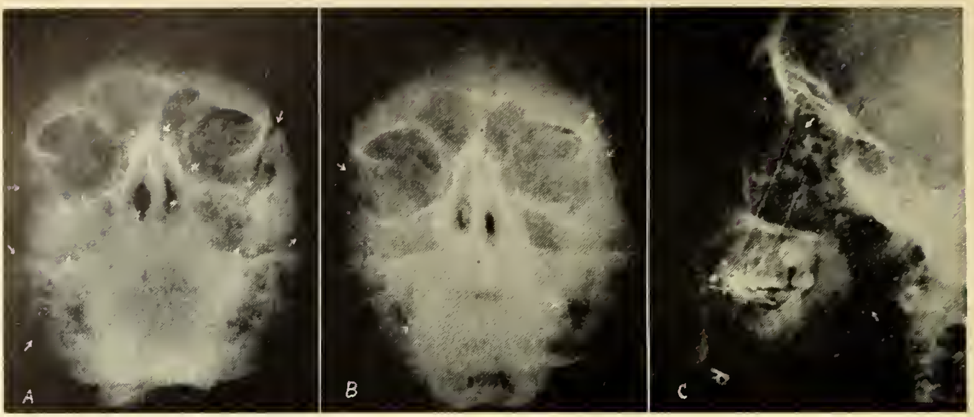


Fig. 6-A. Preoperative roentgenogram. Arrows designate fractures.

Fig. 6-B and C. Roentgenograms after open reduction and fixation. Points of wiring designated by arrows.

use of an extra-oral appliance attached to a headcap; second, internal fixation by open reduction and wiring of the fractured parts to the neighboring unfractured bony structures, giving the advantages and disadvantages of each method.

DISCUSSION

DR. HARWELL WILSON (Memphis): Doctor Adams has presented the subject clearly and by excellent photographic records has made this timely subject both interesting and helpful. I simply wish to emphasize a few points concerning the management of these cases.

First, as stated in the paper, the general condition of the patient must receive paramount attention immediately after the injury. Traumatic shock is frequently present in such cases and is best treated by the immediate use of compatible blood or plasma. Likewise, other injuries must be carefully looked for, as the force which produces facial fractures may cause numerous other injuries.

It is obviously dangerous to wire the teeth together when the stomach is full or when the patient is under a general anesthetic, since vomiting under such conditions might result in an immediate fatality from choking or later from a lung abscess if less material were aspirated.

Doctor Adams has also properly emphasized the importance of using the simplest method available in order to properly immobilize the fracture. This varies with the extent of the fracture. The more widespread use of internal fixation of clean facial fractures agrees with the increasing use of this method applied to fractures in other regions of the body. This method properly used should certainly afford more comfort for the patient.

Regarding the absence of complete immobilization afforded by the plaster headcap, this difficulty has in some instances been overcome by anchoring small screws in the outer table of the skull, though here again the method is not ideal.

DR. JOHN J. SHEA (Memphis): The subject presented by Doctor Adams is of growing importance due to the ever-increasing number of facial fractures. Doctor Adams is to be complimented upon the originality of his wiring. I can substantiate his contentions as to its value. The initial time of correcting one of these facial fractures must depend upon the general condition of the patient. If the patient is in shock, the hemorrhage must be controlled and the wound thoroughly cleansed. Meticulous care in removing all foreign material that has been embedded in the skin will prevent permanent tattoos. When in doubt, a consultation with a neurological surgeon is desired before risking any insult to the intracranial contents by manipulation of the fractured facial bones.

The end result should be a replacement of the fractured fragments to restore the features, the obtainment of symmetrical orbits, and the proper occlusion of the teeth for a satisfactory bite. The use of an intra-antral balloon to maintain the proper elevation of the floor of the orbit in its position is of value. The most hideous deformity complained of by the patient is an unequal position of the eyes when one orbital floor is depressed.

The management of the frontal sinus fractures depends on whether the fracture involves the inner wall. If the fracture is merely through the inferior or external wall, the deformity is corrected, usually by wiring. The external wounds are cleansed, powdered with sulfanilamide, and carefully sutured, for drainage through the nasal frontal duct will suffice. The nasal membrane is treated by vasoconstrictors, as during an acute frontal sinusitis to secure free drainage of the sinus by way of the frontal duct. Should this prove inadequate, the drainage will back out of the wound. This promptly becomes evident, and a small rubber drain can be inserted externally. When the inner cranial wall is injured, as shown by a roentgenogram, a consultation with a neurological surgeon is necessary to determine the presence of a cerebrospinal rhinorrhea. A quick test for a leak of cerebrospinal fluid is made by having the patient lie face downward upon a clean linen handkerchief for ten minutes. If there is a leak, there will be a dripping of a clear fluid upon the handkerchief, which when dried does not crinkle the linen as does the ordinary mucopurulent nasal discharge. The scientific test depends upon the ability of the fluid to reduce Fehling's solution.

A COMMUNICATION FROM THE CHAIRMAN OF THE COMMITTEE ON POSTGRADUATE INSTRUCTION IN SURGICAL DIAGNOSIS

The Committee on Postgraduate Instruction in Surgical Diagnosis met in Nashville on November 29. The program for the years 1943 and 1944 was launched and a full-time instructor employed who will offer postgraduate instruction in surgical diagnosis to the physicians of the state. Such a course never has been offered in Tennessee nor, for that matter, in but very few states in the Union.

From seven applicants, four were interviewed in Nashville, and from this number Dr. J. R. Bromwell Branch of Macon, Georgia, was selected as the instructor.

The committee has tentatively agreed that this course shall cover the following subjects: "The Principles of Wound Healing"; "The Management of Simple Wounds —with Special Reference to War Wounds"; "The Diagnosis and Management of Fractures"; "The Treatment of Burns"; "The Management of Shock"; "Preoperative and Postoperative Care of Patients"; "The Use of the Sulfonamides"; "The Recognition and Management of Brain Injuries and Injuries to the Spinal Cord and Peripheral Nerves"; "Diseases of the Gastrointestinal Tract"; "Nontuberculous Diseases of the Chest."

If the schedule permits, the committee should like to include also "Diseases of the Breast and Diseases of the Vascular System."

It is hoped by the committee that every physician in the state of Tennessee will take advantage of this unusual and exceptional course. Not only is the course arranged for surgeons, but for practitioners who should be interested in it because the family physician probably sees ninety per cent of the surgical cases before they come to the surgeon for treatment; therefore, the practitioner's handling of the cases is highly important, particularly from a diagnostic standpoint.

Instruction will open in West Tennessee early in February, 1943.

Physicians of Tennessee will be interested in reading the outstanding qualifications of Doctor Branch, who received the appointment as instructor of this course:

Name—Joseph Robson Bromwell Branch.

Born—February 28, 1883, at Ellicott City, Maryland.

Married and has two grown children.

Presbyterian in good standing.

Premedical Education — Premedical course at Johns Hopkins, graduating with an A.B. in 1904.

1908-1909—Resident house officer, Johns Hopkins Hospital.

1909-1910 — Resident surgeon, Macon, Georgia, Hospital.

1910-1915—Private practice and attending gynecologist at Macon Hospital, Macon, Georgia.

1915-1918—Professor of surgery, Hunan-Yale Medical School, Changsha, China.

1918-1919—Assistant chief, surgical service, Base Hospital, Camp Meade, Maryland; Camp Lee, Virginia, as captain in the Medical Corps, U. S. Army.

1919—Returned to China in the fall, resuming former post at Changsha until February, 1927.

1927-1928—Associate professor and head of Department of Surgery, Peking Union Medical College, Peking, China.

1928-1940—Professor of surgery, National College of Medicine, Shanghai, China; surgeon in chief, Red Cross (teaching hospital), Shanghai. During this time did part-time private practice in Shanghai.

1940—Returned from China and resumed private practice in Macon, Georgia, and has been attending gynecologist at the Macon Hospital since that time. During all these years, work has been limited to teaching and practicing surgery and gynecology.

The members of the Committee on Postgraduate Instruction in Surgical Diagnosis are:

Dr. J. L. McGehee of Memphis, chairman.

Dean O. W. Hyman of the University of Tennessee College of Medicine, Memphis.

Dr. John M. Lee of the Tennessee State Board of Health, Nashville.

Dr. W. L. Williamson of Memphis.

Dr. E. G. Wood of Knoxville.

Dr. John B. Youmans of Vanderbilt University School of Medicine, Nashville.

Dr. J. O. Manier of Nashville.

Dr. A. M. Patterson of Chattanooga.

Dr. L. W. Edwards of Nashville.

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H. H. SHOULDERS, M.D., Editor and Secretary

DECEMBER, 1942

EDITORIAL

A Christmas Greeting

Best wishes for a Merry Christmas and a Happy New Year to every member of the Association wherever located.

From the headquarters staff.
H. H. SHOULDERS, M.D.
W. M. HARDY, M.D.
WILLARD BATEY
MRS. ETHEL HARRISON

THE POSTGRADUATE PROGRAM TO CONTINUE

It will be remembered that the House of Delegates authorized the Postgraduate Committee to arrange for a postgraduate course in surgery. All the participating agencies have agreed to continue.

The committee has perfected plans for the course to begin in February, 1943, immediately following the completion of the course in internal medicine. An instructor has been selected and a course of lectures is in process of formation.

It is a fine thing that this program is not interrupted by the war emergency. No one denies that a war emergency exists. It is also true that the fewer doctors left at home must do all the work that is done. The doctors left at home will have fewer opportunities to attend medical meetings. They will have almost no opportunity for regular postgraduate work. In fact, they can scarcely leave home and patients for more than a brief stay. They might become stale. They need very badly such a scientific stimulus as this course will afford.

It is of the greatest possible value to patients that this course is to continue through this period. It deserves the loyal support of every doctor.

MEDICAL DISTRESS AREAS

Members of the medical profession who have not read the hearings conducted by a committee of the senate, known as the Pepper Committee, which appeared on page 927 of the *Journal of the American Medical Association* for November 21, should do so.

From this hearing it will be learned that a tremendous issue was being made of the fact that there are a few areas in the United States without adequate medical care.

It appears on the surface that the hearings were designed to build up the idea that there is need for a radical change in the entire medical setup of the United States.

It is well to remember that a total war is on and that about forty thousand doctors have already entered the military service. This fact alone accounts for a shortage of doctors. The medical profession did not fail to anticipate difficulties in meeting all the needs of this period. It did not fail to plan, but many factors interfered with the operation of plans which were made.

It was recognized as a sound policy, which the American people would support, that the Army and Navy should have first choice of physicians, both as regards physical fitness and professional ability. The idea back of this was that the soldiers and sailors deserve the best we can give. Furthermore, the Procurement and Assignment Service was not created until a short period before Pearl Harbor and then was not implemented with funds, personnel, and quarters until a long period after Pearl Harbor.

A draft law was in effect long before and young doctors in draft age who had recently located in areas, where they were needed, felt compelled to get into the service for two reasons: first was the patriotic impulse, and second, the liability of being drafted as a private. But in spite of all these other difficulties the areas of acute distress at the moment are, in the main, areas into which many thousands of people have moved to obtain employment in war industry. There are towns which have grown from a few hundred to several thousands in a very short period of months. These are the areas with the most acute distress.

Several suggestions have been made as to how the needs of these distress areas may be met, and at the same time not tear down standards of medical practice nor introduce a communistic form of medical practice.

It is not possible to mention all the suggestions that have been made, but it is appropriate that the medical profession be familiar with one. Briefly, it is as follows: That the Surgeon General of the United States Public Health Service commission a number of reserve officers and then place such officers in these distress areas upon the request of the board of health and the medical profession in the area under discussion. The idea is that the moment the war is over these towns may become ghost towns. Therefore, the area does not appeal to an established doctor who wishes to locate where his services are needed and which location will be permanent.

It is thought that there are doctors who are physically disqualified for military service in the draft age, and not established in practice anywhere, who will be available for such appointment and service.

It seems that this plan might work if the proper safeguards are drawn up and followed and if the proper type of agency administers it.

THE DOCTOR AND THE PHARMACIST

On another page of this issue of the JOURNAL, under "Medical Societies," is a tribute to Dr. George T. Wilson and Dr. Henry W. Cooper.

This statement was read at a dinner given by the Nashville Surgical Supply Company of Nashville to the Nashville Academy of Medicine and Davidson County Medical Society.

A movement has been on for the last few years to promote a more intimate fellowship between the pharmaceutical profession and the medical profession. An intimate relationship between the medical profession of Nashville and the Nashville Surgical Supply Company antedates this movement by a number of years. Doctors Wilson and Cooper promoted this idea by giving a dinner each year to the doctors of Nashville. It has been repeated each year until it has become almost an institution.

These two founders of the institution died this year, but the widow of Doctor Cooper, now president of the concern, insisted that the policy be continued because she was certain her husband and father would have it so.

The pharmacist makes a real contribution to medical care. It is very appropriate that the two professions be linked together in a harmonious relationship and certainly fine fellowship promotes such an end.

THE MEDICAL PROFESSION OF THE UNITED STATES AND THE GOOD NEIGHBOR POLICY

It has been pointed out that medical doctors hold positions of political leadership in many of the countries of South America. This places the medical profession of the United States in a position to be of great help in carrying forward the *good neighbor policy* which has been promulgated by the State Department.

The medical profession of the United States is cooperating in carrying forward this policy. The American Medical Association is preparing to publish an abbreviated issue of the *Journal of the American Medical Association* in Spanish and in Portuguese for distribution in South America.

The association this year invited a number of doctors from South America to attend the sessions in Atlantic City and a large number did attend. A much larger number would have attended except for the transportation difficulties which existed at the time.

The American Urological Association has suggested that "schools of the United States which prepare students for the study of medicine teach a minimum of two years of Spanish and/or Portuguese."

It is most likely that contact with these South American countries will be more frequent and more intimate in the future than has been the case in the past.

It might be worth while to suggest to those who plan the curriculum of high school students that Spanish and Portuguese be taught. It is certainly quite possible that these languages may be of more practical usefulness in the future than German or French.

European countries have cultivated our neighbors to the south of us. They have sent medical periodicals free of charge. Of course, there was a commercial side to it, in that the magazines carried advertisements of products made in those countries.

There are many things which the medical profession can do very effectively in cultivating a more wholesome relationship between the medical professions and peoples of all the Americas.

On another page of this issue of the JOURNAL will be found a statement from Dr. J. L. McGehee, chairman of the Committee on Postgraduate Instruction in Surgery.

NEWS FROM AND ABOUT TENNESSEE DOCTORS IN THE MILITARY SERVICE

Herbert Wilson, Jr., lieutenant, Medical Corps, U. S. N., U. S. S. Swanson, New York, to U. S. S. Monrovia, care of Bethlehem Steel Company, Sparrows Point, Maryland.

Jack Chesney, captain, Medical Corps, A. U. S., Fitzsimmons General Hospital, Denver, Colorado, to Army General Hospital, White Sulphur Springs, West Virginia.

Hugh G. Reaves, major, Medical Corps, A. U. S., Knoxville, to Chief of Radiology, Station Hospital, Drew Field, Florida.

Chas. M. Armstrong, captain, Medical Corps, A. U. S., Knoxville, to Hotel Triton, Miami Beach, Florida.

Joe Strayhorn, captain, Medical Corps, A. U. S., Nashville, to Lawson General Hospital, Atlanta, Georgia.

Paul R. Swanson, first lieutenant, Medical Corps, A. U. S., Station Hospital, El Paso, Texas, to Tenth Field Hospital, Camp Bowie, Texas.

James C. Gardner, major, Medical Corps, A. U. S., Nashville, to Army and Navy General Hospital, Hot Springs National Park, Arkansas.

Spencer Y. Bell, lieutenant (jg), Medical Corps V (G), U. S. N. R., Knoxville, to Naval Air Station, Jacksonville, Florida.

O. S. McCown, Jr., captain, Medical Corps, A. U. S., Memphis, to Station Hospital, Port of Embarkation, New Orleans, Louisiana.

James R. Fancher, major, Medical Corps, Headquarters, VII Corps, A. P. O. 307, San Jose, California, to A. P. O. 307, Jacksonville, Florida.

DEATHS

DR. C. H. KYKER

Dr. C. H. Kyker, Johnson City; Lincoln Memorial University Medical Department, Knoxville, 1911; aged fifty-six; died November, 1942.

DR. S. S. BROWN

Dr. S. S. Brown, Pleasant View, Kentucky; formerly of Jellico, Tennessee; Hospital College of Medicine, Louisville, 1896; aged seventy; died September 4, 1942.

DR. W. S. MIMS

Dr. W. S. Mims, Ardmore; Memphis Hospital Medical College, Memphis, 1910; aged sixty-five; died November 9, 1942.

DR. J. J. MCFARLAND

Dr. J. J. McFarland, Lebanon; Vanderbilt University School of Medicine, Nashville, 1893; aged seventy-one; died November 11, 1942.

Dr. Horton Casparis

Dr. Horton Casparis, Nashville; Johns Hopkins University School of Medicine, Baltimore, 1919; aged fifty-one; died November 11, 1942.

Dr. B. C. Arnold

Dr. B. C. Arnold, Jackson; Vanderbilt University School of Medicine, Nashville, 1913; aged fifty-four; died November 13, 1942.

Dr. H. O. Anderson

Dr. H. O. Anderson, Williamsport; University of Nashville Medical Department, Nashville, 1907; aged sixty-two; died November 16, 1942.

Dr. J. D. Bryant

Dr. J. D. Bryant, Fayetteville; University of Tennessee, 1890; died November 24, 1942.

Dr. G. N. Springer

Dr. G. N. Springer, Hohenwald, Memphis Hospital Medical College, Memphis, 1897; died recently.

RESOLUTIONS

Dr. S. S. Brown

Whereas, Dr. S. S. Brown, one of the oldest members and a former officer of the Anderson-Campbell County Medical Society, died at his home in Pleasant View, Kentucky, September 4, 1942. We wish to express our high appreciation of his loyal fellowship and devotion to his profession.

Doctor Brown, who died at the age of seventy, graduated with honors from Hospital College of Medicine at Louisville, Kentucky, in 1896, and also took a postgraduate course in New York in 1922. He was a member of the Tennessee State Medical Association and the American Medical Association.

His death removes from our profession a valued member and from our community an eminent citizen. We who knew him have every reason to mourn the loss of a friend and colleague. We will miss his counsel and assistance. In recognition of his character and service the Anderson-Campbell County Medical Society extends to the family and relatives of Doctor Brown its deep sympathy in their loss.

Therefore Be It Resolved, That a copy of these resolutions be sent to the family, a copy to the TENNESSEE MEDICAL JOURNAL, and that a copy be written into the minutes of the Anderson-Campbell County Medical Society.

(Signed)
FRANK J. SLEMONS, M.D.,
JAMES L. HEFFERNAN, M.D.,
Committee.

Approved by the Anderson-Campbell County Medical Society.
J. S. HALL, *Secretary.*

NEWS NOTES AND COMMENTS

Dr. David W. Hailey of Nashville announces the removal of his office to 400-402 Doctors Building for the practice of internal medicine.

Dr. A. F. Cooper has been appointed medical director of the Out-Patient Department of the John Gaston Hospital of Memphis, which will require his entire attention. The recently dedicated seven-story building, Gailor Memorial Hall, will house the Psychiatric Hospital on the top three floors, while the Out-Patient Department and lecture rooms of the University of Tennessee will be on the remaining floors.

Dr. T. S. Hill will be in charge of the Psychiatric Hospital and head of the Department of Psychiatry of the University of Tennessee, College of Medicine.

Friends of Dr. J. O. Walker of Franklin, Tennessee, will be glad to know that his son, who was first reported as missing in action and presumed dead, is living and well, but a prisoner in Germany.

News of Dr. Frank Whitacre, former Sylvania physician, now held prisoner by the Japs in the Philippines, was brought to his family by refugees from the Orient on the exchange liner Gripsholm. They reported that he is working at the internment hospital at Manila.—*Ohio State Medical Journal,* December, 1942.

CHANGE OF ADDRESS

Dr. J. P. Cullom, Lenoir City, to 609 Walnut Street, Knoxville.

Dr. Thomas Burk, Rayville, Louisiana, to Hazlehurst, Mississippi.

Dr. Marion G. Fisher, Jonesboro, to Morristown, Tennessee.

Dr. John L. Chestnut, Morristown, to Box 509, Cookeville, Tennessee.

The National Research Council, 2101 Constitution Avenue, Washington, D. C., under the direction of Lewis H. Weed, chairman of the Division of Medical Sciences, has issued a very interesting and comprehensive paper, entitled "The Critical Antimalarial Problem and Its Solution." Those interested in this problem will do well to write Doctor Weed for a copy of the article.

UROLOGY AWARD

The American Urological Association offers an annual award "not to exceed $500" for an essay (or essays) on the result of some specific clinical or laboratory research in urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, May 31-June 3, 1943, Hotel Jefferson, St. Louis, Missouri.

Essays must be in the hands of the secretary, Dr. Thomas D. Moors, 899 Madison Avenue, Memphis, Tennessee, on or before March 1, 1943.

MEDICAL SOCIETIES

Davidson County:

November 17—"Some Interesting Lesions Encountered in Routine X-ray Examinations," using miniature films at the Nashville Air Center, by Captain Archie Fine, radiologist at the Nashville Air Center, formerly attending radiologist and director of tumor clinic at Jewish Hospital, Cincinnati, Ohio. Discussion by Dr. C. M. Hamilton.

November 24—Members of the society were invited to attend a dinner given by the Nashville Surgical Supply Company at the Noel Hotel.

December 1—"Some Scientific Achievements in Public Health," by Dr. W. S. Leathers. Discussion by Dr. John J. Lentz.

GEORGE T. WILSON AND HENRY W. COOPER: A VIGNETTE*

By Joseph F. Gallagher, M.D., Nashville

"Change and chancefullness, in their fruit-full noon-time, set them day by day together and despite diversity in years, fused them in friendship."

It was in the year 1910 that George T. Wilson moved with his family from Bowling Green, Kentucky, to Nashville and acquired an interest in the DeMoville Drug Company—a firm hallowed in the retail drug business in this community for over a half century. It was in that same year that Henry W. Cooper entered the employ of that same company. Both were graduates in pharmacy, but Mr. Cooper's attentions were directed to the then small surgical instrument section, while Mr. Wilson engaged in the usual pursuits of the drug trade. But it was not business relationship alone that welded these two personalities into an intimate and unyielding association. Both were past exalted rulers of the Benevolent and Protective Order of Elks and both had, in the high ethical and social teachings of that fraternity, a common denominator even before they met for the full fruition of a lasting affection.

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*Read at the annual dinner given by the Nashville Surgical Supply Company to the Nashville Academy of Medicine, November 24, 1942.

The fickleness of financial fortune began to assert itself in the DeMoville Drug Company, and these two gentlemen, seeing the decline and probable early demise of this honored firm, decided to embark on an enterprise of their own. Thus the Nashville Surgical Supply Company came into being. The Wilson-Quick Pharmacy, as an integral part of the company, was an afterthought.

The ever-increasing success of their business is a living testimonial and worthy tribute to their honesty, integrity, and unfailing courtesy. They seemed to sense with Emerson that: "The only way to have a friend is to be one." There are many physicians in this community (indeed some may be in this very audience) who were stimulated and encouraged by their words and very tangible assistance as they embarked on the active practice of their profession.

In continuing this annual custom of a dinner for the members of the Nashville Academy of Medicine and allied friends in business, Mrs. Cooper felt that if the wishes of her father and husband could be known, they would heartily approve of our gathering here this evening, for this event was the high light of the year for them.

Curtailed as it is by the exigencies of war and sombered by the physical absence of our genial hosts, for the moment let us imagine them here with us, as they were only a short time ago, wishing us health and happiness and continued success. These, I am sure, would be their expressed sentiments were they present tonight in person. These same sentiments I am extending to you in the name of their daughter and widow.

Officers elected for 1943 are as follows: Dr. H. L. Douglass, president; Dr. J. C. Overall, vice-president; Dr. H. E. Paty, secretary-treasurer.

Delegates to State Convention: Dr. J. J. Ashby, Dr. W. G. Kennon, Dr. Burnett Wright, Dr. D. C. Seward, Dr. D. W. Hailey, Dr. J. C. Pennington.

Alternates: Dr. M. B. Davis, Dr. Eugene M. Regen, Dr. Harlin Tucker, Dr. T. Fort Bridges, Dr. R. R. Crowe, Dr. H. B. Brackin.

Dr. John M. Lee and Dr. Robert E. Sullivan were elected to succeed themselves on the Board of Directors.

Hamilton County:

December 10—"Vital Statistics," by Dr. F. O. Pearson.

"Control of Syphilis," by Dr. Murray C. Brown.

December 17 — "Appendicitis: Surgical Anatomy and Approach," by Dr. O. C. Gass.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met November 24 in Waynesboro and elected officers for 1943.

By unanimous vote we are to keep our charter and meet four times yearly. Our first meeting for 1943 will be in Waynesboro on the last Tuesday night in March.

The following were elected for 1943:

Dr. W. E. Boyce, Hohenwald, president.

Dr. J. V. Hughes, Savannah, vice-president for Hardin County.

Dr. J. W. Danley, Lawrenceburg, vice-president for Lawrence County.

Dr. Jerome Powers, Hohenwald, vice-president for Lewis County.

Dr. O. A. Kirk, Linden, vice-president for Perry County.

Dr. J. T. Keeton, Clifton, vice-president for Wayne County.

Dr. O. H. Williams, Savannah, secretary-treasurer.

Delegate to State Meeting, Dr. Leo Harris, Lawrenceburg.

Alternate delegate, Dr. W. E. Boyce, Hohenwald.

(Signed) O. H. WILLIAMS, M.D.,
Secretary.

Knox County:

November 17 — Essayist: Dr. Henry Long. Discussers: Drs. Ralph H. Monger and Bruce Powers.

December 1—"Medical History—Twentieth Century," by Dr. W. H. Enneis.

December 8—"State Program for the

Tubercular Patient," by Dr. W. W. Hubbard of Nashville.

Montgomery County:

The Montgomery County Medical Society met on November 18. Guests of the society were the medical officers from Camp Campbell.

Dr. W. C. Dixon of Nashville spoke on the subject of "Genital Prolapse." Dr. Burnett W. Wright's subject was "Present-Day Methods of Treating Cancer."

Robertson County:

The newly-elected officers of the Robertson County Medical Society for the year 1943 are as follows:

Dr. A. R. Kempf, Springfield, president.
Dr. W. S. Rude, Ridgetop, vice-president.
Dr. John S. Freeman, Springfield, secretary-treasurer.

OTHER MEDICAL SOCIETIES

The fifth Annual Congress on Industrial Health, sponsored by the Council on Industrial Health of the American Medical Association, will be held Monday, Tuesday, and Wednesday, January 11-13, 1943, at the Palmer House in Chicago. These meetings are open to physicians and others interested in industrial health. There is no registration fee.

The Board of Regents of the American College of Physicians has announced the cancellation of their 1943 annual session, which was scheduled to be held in Philadelphia, April 13-16, 1943. This action was taken after thoughtful consideration of all factors involved, including an intimation from the Secretary of War and the Office of Transportation that larger national medical groups should not plan meetings at the time set; a growing difficulty in getting speakers and clinicians of top rank to maintain the usual standards of the program; prospect of greatly reduced attendance because civilian doctors are faced with too great a burden of teaching and practice already; a decreasing active membership, due to approximately twenty-five per cent of all doctors being called to active military service. President James E. Paullin announced, however, that all other activities of the college would be pursued with even greater zeal, and that the college would especially promote regional meetings over the country and organize postgraduate seminars in the various military hospitals for doctors in the armed forces.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Combination of Local and General Anesthesia in Obstetrics. Samuel S. Rosenfeld, M.D. The American Journal of Surgery, November, 1942.

While local anesthesia alone is generally efficacious, some patients are exhausted, neurotic, and refuse to cooperate. In these cases a small amount of ether by inhalation has a better effect than drugs producing twilight sleep.

One-half of one per cent procain is infiltrated into perineal tissues, then light ether anesthesia permits all manipulations, forceps, episiotomies, and repairs.

This combination was employed in eighty-five cases. There were no maternal deaths. There were only two complications. One, a mild postpartum hemorrhage and one of bronchopneumonia, which was probably developing before confinement. Four fetal deaths occurred which in no way could be attributed to the anesthetic. This combination is safe, convenient, and recovery is rapid.

INTERNAL MEDICINE

By R. B. Wood, M.D.
By D. R. Thomas, M.D.
Medical Arts Building, Knoxville

Cholesterol Studies in the Aged. Henry A. Raphy, M.D., F.A.C.P., and Bernard Newman, B.S., Ch.E., New York. Journal of Laboratory and Clinical Medicine, September, 1942.

A difference of opinion exists as to whether advancing years have any effect on cholesterol concentration of the blood. In 1924 Bing and Heckscher found it increased with years, while Pake, Kirk Lewis, Thompson, and Van Slyke found there was no important change in any blood lipid fraction with advance in age. Hunt agreed with the latter group. The authors in their attempted study of the problem selected seventy-six males and seventy-four females, all ambulatory patients on regular diet in a home for the aged. Determination was made on total and estrified cholesterol in both serum and whole blood after eight hours without food. Of the 100 persons in whom whole blood was studied fifty-seven per cent had a total cholesterol of over 200 milligrams per 100 cubic centimeters and sixty-eight per cent showed free cholesterol above forty per cent. In fifty persons in whom serum was used seventy-four per cent had a total concentration of over 200 milligrams and fifty-four per cent showed an excess of forty per cent free cholesterol. According to Todd and Sanford, the normal limits for total cholesterol estimated by the Bloor method were 165 to 200 milligrams and a maximum of thirty per cent for free sterol, whereas the average in this series was 238 milligrams per 100 cubic centimeters, of which thirty-nine per cent existed in the free state.

The Treatment of Severe Periodic Headache with Desensitizing Doses of Prostigmine. Louis Pelner, M.D., and M. E. Aibeil, M.D., Brooklyn, New York. The Journal of Laboratory and Clinical Medicine, September, 1942.

The authors treated a series of sixty cases of periodic headaches chiefly of the migraine and "histamine" types, with gradually increasing doses of prostigmine bromide given orally.

The gratifying result tended to prove to the authors that: (1) in addition to histamine, acetylcholine is one of the factors involved in the production of these headaches; (2) that a similar neurobiochemical mechanism is operative in many tyes of periodic headaches; (3) that prostigmine is as effective as histamine and more convenient than it in the treatment of these headaches.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Dinitrophenol and Its Relation to Formation of Cataract. W. D. Horner. American Journal of Ophthalmology, November, 1942.

This exhaustive review of the whole subject of the effects of dinitrophenol on man is presented by the author of the first case report of dinitrophenol.

The pharmacologic aspects of four phases in the use of dinitrophenol are traced: (a) as a laboratory curiosity in 1895; (b) as a health hazard in the munitions industry from 1914 to 1918; (c) as a metabolic stimulant with possible clinical applications in 1933; and (d) as a potent drug which was used in the treatment of obesity in 1934 and 1935, and which exhibited certain unfortunate side reactions. The majority of these reactions were trivial, a few were fatal, and a middle group affecting the skin and blood were severe; but the most serious of all was the development of cataract. Cataract occurred with recommended doses of the drug in a total of more than 177 persons and without other demonstrable reactions. Of these patients, ninety-eight per cent were women who averaged about forty-five years of age. The cataracts were all of one type, were bilateral, developed rapidly, and occurred at any time up to a year after the drug had been discontinued. Medical treatment was without effect, but surgical extraction proved very successful. Late secondary cataract was of frequent occurrence after extraction. The reason why cataract follows treatment of obesity with dinitro bodies is unknown, and its relation to the ingestion of these substances is unproved. Dinitrophenol does not alter the permeability of the lens in vivo or in vitro, nor does it increase inordinately the oxygen consumption of the lens as compared with other issues. It does not hasten or otherwise affect the artificial production of lactose cataract in animals. An impasse has been reached in this problem, since the drug is no longer being administered to human beings and all attempts to produce cataract by giving it to animals have been unsuccessful. Since the physiologic actions of dinitrophenol are highly desirable, further study should be more to eliminate the toxic reactions, or, if this is not feasible, some other less toxic substitute should be developed.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

The Excretion of Nicotine in Breast Milk and Urine from Cigaret Smoking: Its Effect on Lactation and the Nursling. H. Harris Perlman, M.D., and Others. The Journal of the American Medical Association, 120: 1003 (November 28), 1942.

There is no definite scientific evidence of the effect of cigaret smoking by pregnant women on the fetus. The numerous studies of the effect of the habit by parturient women on lactation and on the nursling have resulted in conflicting reports, some of which are quoted by the authors. The authors measured the excretion of nicotine in the breast milk and urine of fifty-five white primiparas and multiparas who smoke cigarets in an effort to determine the effect of the habit on lactation and on the nursling.

In this study nicotine excreted was measured by the bioassay method, fresh water crustaceans, Daphnia magna being used, and the technique and methods employed are set out in detail. All the mothers cooperating in the study were accustomed to smoking cigarets and resumed smoking within two days after confinement. Specimens for nicotine determinations were collected between the fourth and ninth day post partum.

Nicotine was found in every specimen of milk and urine from mothers who smoked cigarets. It was never found in specimens from nonsmoking mothers. The greater the number of cigarets smoked per day the higher the nicotine content of the specimens was the rule. Specimens obtained in the afternoon showed constantly greater concentrations of nicotine than specimens obtained in the morning. Other observers have noted that the main excretion of nicotine appears in the milk and urine four to five hours after smoking. Approximately eleven to seventeen times as much nicotine was excreted in the urine as in the milk.

The patients used in this study were discharged from the hospital about the tenth day post partum. The authors state that it is their impression that on discharge from hospital the number of mothers who smoked cigarets and who failed to nurse their infants successfully was no greater than in the nonsmoking group at their hospital.

The nurslings of smoking mothers had slightly more regurgitation during the early days of their stay in hospital, but otherwise they were as normal as babies of nonsmoking mothers. There was no abnormality of stools, no evidence of toxic effect from nicotine, and they gained in weight as any other group of infants.

The authors point out that the absence of harmful effect of nicotine on lactation and on nurslings might be explained on the basis of tolerance to the chemical. The mothers smoked before, during, and after pregnancy and had developed a tolerance for nicotine; the infants were exposed to the effect of the chemical from the time of conception and likewise they acquired tolerance.

ROENTGENOLOGY

By J. Marsh Frere, M.D.
Newell and Newell Sanitarium, Chattanooga

A Study of Radiological Treatment of Cancer of the Cervix. M. C. Reinhard, M.A.; H. L. Goltz, B.S.; and B. F. Schreiner, M.D., F.A.C.S. Radiology, Vol. 39, No. 2, p. 144, August, 1942.

This study includes graphs showing the age distribution and survival of 557 patients with cervical cancer of the clinical groups I, II, and III, regardless of treatment, admitted to the State Institute for the Study of Malignant Diseases, 1931 to 1935, inclusive. Of the 557 cases, 457 were classified according to treatment into two groups: those receiving primary irradiation only and those receiving primary plus supplementary irradiation. Approximately fifty per cent of the 457 cases required retreatment and fell into the second group. The survival rate for this group is definitely less than for the cases receiving primary irradiation. The poorer survival of this group could be attributed to one or more of the following causes: (a) the nature of the disease itself, (b) extension of the disease to regions of inadequate dosage, (c) the normal biological variation among individuals, (d) the supralethal effect of the radiation, (e) the age of the patient.

The age distribution of these two groups is shown graphically. From the curves it is obvious that a better survival is associated with the older age groups. Curves are also included which show the influence of age on the percentage survival of the two groups mentioned as well as the normal expectancy of life in a female population.

Isodose and dosage distribution curves are presented. The average dosage curves show a steep gradient, from two to five centimeters lateral to the mid-line, which is reflected in the progressively poorer survival with increased spread of disease.

Doses at the two-centimeter mark, within a range of 4,000 to 8,000 r primary radiation only, were capable of producing a seventy-five per cent five-year survival free from disease in the combined I and II groups, and a fifty-five per cent five-year survival free from diseases in the group III cases.

Because of the poorer survival of group III cases, where the disease has presumably spread to regions receiving lower doses, it would seem reasonable to conclude that the dosage to the lateral portions of the pelvis should have been increased.

Of those patients in groups I, II, and III receiving supplemental irradiation, the highest survival is associated with doses less than 2,000 r in addition to a full course of primary irradiation.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
307 Doctors Building, Knoxville

The Successful Treatment of Granuloma Inguinale with Special Reference to the Use of Podophyllin. Tomskey, Vickery, and Getzoff. Journal of Urology, October, 1942.

This study was made to evaluate the various methods of treatment of granuloma inguinale and to present a new mode of therapy.

Granuloma inguinale occurs chiefly in Negroes and the lesions are fairly well recognized. The diagnosis may be confirmed by staining a smear from the lesion with Wright's stain and noting the presence of Donovan bodies. Biopsy studies reveal chronic inflammatory changes with granulations. The chronicity of the disease is marked.

Surgical excision, antimony preparations, sulfanilamide, and diathermy have all been recommended and used extensively. However, despite reports of encouraging results by the use of these methods, the morbidity and the incidence of recurrence continue to be high.

About a year ago, at the suggestion of Dr. I. W. Kaplan, a mixture of twenty per cent podophyllin in olive oil was tried in the treatment of granuloma inguinale. Being applied locally to the granulating tissue, podophyllin is an irritant to the skin, and its mode of action in granuloma inguinale is not yet definitely understood. However, the drug probably acts as a dehydrating agent on the granulating tissue and also exerts a cauterizing effect.

In this study there were 102 cases of proven granuloma inguinale, sixty-two colored males and forty colored females. Many had previously been treated by the approved methods, with improvement in some, and some had had no previous treatment.

The patients treated with podophyllin, irrespective of the type or extent of the lesion, required considerably less hospitalization, and when discharged, they were completely healed and have had no recurrence. It was also noted that there was no induration, fibrosis or keloid formation after the healing.

The following was the outline of treatment: (1) Clean lesion with hot sitz bath and hydrogen peroxide twice daily. (2) After cleaning, apply twenty per cent podophyllin in olive oil. If there is much burning and pain, apply four per cent nupercaine ointment also. (3) When the granulations disappeared and there was a healthy base present, podophyllin was discontinued and scarlet red ointment was applied after each cleaning to stimulate epithelialization.

This treatment has proven so superior to the other methods that the author feels that the previously recommended methods of treatment can be discarded.

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Towns in each county arranged alphabetically and the members in each town arranged alphabetically.
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J. Owsley Manier
†Travis H. Martin
W. M. McCabe
G. S. McClellan
C. C. McClure
Robt. L. McCracken
Thos. D. McKinney
†Jas. R. McMillon
C. S. McMurray
†J. G. Mead
†Cleo M. Miller
†Theodore Morford
Walter M. Morgan
†Hugh J. Morgan
N. B. Morris
P. G. Morrissey
†P. G. Morrissey, Jr.
†M. K. Moulder
D. L. Mumpower
D. R. Neil
Oscar G. Nelson
O. A. Oliver
†John R. Olson
Eugene Orr
Wm. F. Orr, Jr.
James C. Overall
†Fred W. T. Overton
John Overton
Wm. M. Palm
H. E. Patey
†Robert C. Patterson
Edna S. Pennington
J. C. Pennington
Cobb Pilcher
Bruce P'Pool
T. G. Pollard
Paul E. Purks
James Seay Read
E. M. Regen
W. E. Reynolds
S. B. D. Rhea
H. P. Rieger
†Elkin L. Rippy
S. S. Riven
E. L. Roberts
†Miller Robinson
S. T. Ross
B. T. Rucks
†A. F. Russell
Harry Sauberli
†J. H. Sayers
George F. Seeman
†Ewing Seligman
†Maurice Seligman
D. C. Seward
Trimble Sharber
N. S. Shofner
H. H. Shoulders
H. S. Shoulders
Ammie T. Sikes
T. E. Simpkins
D. W. Smith
†Henry C. Smith
Herman Spitz
†Joe M. Strayhorn
W. D. Strayhorn
Robt. E. Sullivan
†W. Albert Sullivan
W. D. Sumpter
†Arthur J. Sutherland
S. R. Teachout
Pauline Tenzel
A. B. Thach, Sr.
†A. B. Thach, Jr.
C. S. Thomas
H. M. Tigert
†W. Oakes Tirrill, Jr.
†C. C. Trabue
C. B. Tucker
Harlan G. Tucker
Edward L. Turner
Wm. O. Vaughan
†Paul Warner
R. J. Warner
Jno. T. Watkins
T. Bruce Weaver
†Thos. S. Weaver
Albert Weinstein
†Bernard Weinstein
†A. L. White
J. T. Whitfield
T. A. Whitfield
W. W. Wilkerson, Jr.
†Claiborne Williams
W. C. Williams
†Herbert Wilson, Jr.
Jack Witherspoon
W. H. Witt
T. V. Woodring
Burnett Wright
R. E. Wyatt
T. Hugh Young
John B. Youmans
Kate Savage Zerfoss
Thos. B. Zerfoss

Old Hickory

T. W. Dailey
E. P. Johnson
R. P. Miller
†E. B. Rhea
John H. Soloman

DECATUR COUNTY

Decaturville

H. L. Conger

Parsons

L. E. Luna
(Mbr. Madison Co.)

DeKALB COUNTY

Smithville

L. S. Love
(Mbr. Putnam Co.)

DICKSON COUNTY

Dickson

R. P. Beasley
Lawrence C. Jackson
†W. M. Jackson
W. J. Sugg
Hartwell Weaver

White Bluff

H. P. Spencer

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†Military Service.

DYER COUNTY

Dyersburg

†W. E. Anderson
E. H. Baird
†J. Paul Baird
J. P. Baird
J. B. Berry
J. D. Brewer
James B. Cochran
Percy A. Conyers
†C. L. Denton
†O. B. Landrum
J. A. Ledhetter
B. G. Marr
A. H. Moody
J. G. Price
C. A. Turner
N. S. Walker
Lydia V. Watson
W. P. Watson

Finley

P. C. Tipton

Newbern

D. T. Holland
John E. Frazier
E. T. Haskins
J. W. Wynne

Tigrett

P. E. Miller

FAYETTE COUNTY

Oakland

L. D. McAuley

Rossville

F. K. West

Somerville

H. L. Armstrong
John L. Armstrong
John W. Morris
J. T. Nardo

FENTRESS COUNTY

Jamestown

J. Claude Bertram
Guy C. Pinckley
J. Peery Sloan
I. R. Storie

Wilder

C. A. Collins

FRANKLIN COUNTY

Decherd

Reynolds Fite

Sewanee

E. W. Kirby-Smith
H. T. Kirby-Smith
R. M. Kirby-Smith
Oscar N. Torian

Sherwood

George E. Bogart

Winchester

W. E. Lindsey
J. P. Moon
Alfred Parker Smith

GIBSON COUNTY

Bradford

J. H. McAnerny

Dyer

F. Douglass
John J. Jackson
R. L. Newman

Gibson

J. H. Rozzell

Humboldt

Chas. W. Davis
J. W. Oursler
G. W. Penn
George E. Spangler

Medina

Robt. Morris

Milan

†M. K. Crothers
H. P. Clemmer
†James O. Fields
R. F. Hughes
P. D. Jones
F. L. Keil

H. N. Moore
J. L. Woodall
(Mbr. Carroll Co.)

Trenton

T. V. Banks
†J. O. Barker
†B. T. Bennett, Jr.
E. P. Bowerman
†Roscoe Faulkner
W. C. McRee
†Henry J. Roberts
Finis A. Taylor

Yorkville

J. A. Jones

GILES COUNTY

Aspen Hill

G. C. Grimes

Bethel

L. A. Edmondson

Pulaski

Jas. K. Blackburn
T. F. Booth
D. W. Cowgill
W. J. Johnson
John H. Morris
W. K. Owens
J. U. Speer
R. E. Warren

GRAINGER COUNTY

Washburn

R. J. Phlegar
(Mbr. Knox Co.)

GREENE COUNTY

Baileyton

J. G. Hawkins

Greeneville

S. T. Brumley
L. E. Coolidge
R. S. Cowles
N. H. Crews
L. E. Dyer
P. L. Fisher
C. P. Fox, Jr.
Haskell W. Fox
R. B. Gibson
C. B. Laughlin
W. T. Mathes
W. H. Tanksley
(Mbr. Sullivan-Johnson Co.)

Mosheim

M. A. Blanton
†Hal Henard

Tusculum

James T. Campbell

GRUNDY COUNTY

Monteagle

Wm. A. Brewer
T. F. Taylor

Pelham

U. B. Bowden

HAMBLEN COUNTY

Morristown

†M. J. Bellaire
L. A. Brendle
(Mbr. McMinn Co.)
Marion G. Fisher
(Mbr. Washington, Carter, Unicoi Cos.)
P. L. Brock
P. L. Henderson
W. E. Howell
Y. Alvin Jackson
L. W. Nabers
F. F. Painter
†R. A. Purvis
M. J. Raine
†D. R. Roach
B. C. Weesner
†D. J. Zimmerman

HAMILTON COUNTY

Chattanooga

Justin O. Adams
Geo. B. Alder
E. R. Anderson
Wm. E. Anderson
J. J. Armstrong
†H. M. Ausherman
S. J. Axelrod
†C. H. Barnwell
S. H. Barrett
Wesley A. Barton
†Alvin H. Benz
J. L. Bibb
E. L. Bishop
(Mbr. Davidson Co.)
T. R. Blanks
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J. W. Bradley
†Forrest G. Bratley
J. C. Brooks
†J. C. Brooks, Jr.
L. P. Brooks
Murray C. Brown
†S. W. Brown
Wm. E. Bryan
†E. F. Buchner, Jr.
W. R. Buttram
Earl R. Campbell
†Douglas Chamberlain
Cleo Chastain
†John W. Claiborne, Jr.
Rupert M. Colemore
John L. Cooley
Thos. G. Cranwell
Tolbert C. Crowell
Doyle E. Currey
J. Tom Currey
T. Lyles Davis
O. M. Derryberry
E. M. DeLay
Paul H. Dietrich
A. F. Ebert
†J. R. Fancher
John B. Fitts
†Richard Van Fletcher
S. A. Fowler
J. Marsh Frere
O. C. Gass
E. A. Gilbert
A. E. Goodloe
C. H. Gurney
F. Russell Hackney
†J. L. Hamilton
H. H. Hampton
†Frank Harris
E. M. Harrison
Carl A. Hartung
John B. Haskins
G. P. Haymore
Chas. R. Henry
H. P. Hewitt
†Homer D. Hickey
†J. M. Higginbotham
A. W. Hilliard
J. F. Hobbs
John W. Hocker
J. McC. Hogshead
†Howard T. Holden
O. G. Hughes
P. R. Hysinger
D. Ishell
Burton L. Jacobs
†Joseph Johnson, Jr.
Franklin Johnson
J. Paul Johnson
J. W. Johnson
D. B. Karr
†Howard Karr
†Joe Killebrew
†John J. Killeffer
Gene H. Kistler
H. P. Larimore
Chester L. Lassiter
Hiram A. Laws, Jr.
Stewart Lawwill
†Phillip H. Livingston
H. D. Long
S. H. Long
T. J. Manson
S. S. Marchbanks
Fred E. Marsh
†Jos. T. Marshall
(Mbr. Blount Co.)
John R. Martin
M. A. Meacham
†Richard H. Mellen
†Augustus McCravey
J. B. McGhee
J. D. L. McPheeters
†Paul Milton
Cecil E. Newell
E. Dunbar Newell
E. T. Newell
†Edward T. Newell, Jr
A. M. Patterson
†R. L. Patterson
F. O. Pearson
†W. D. L. Record
†Chas. T. Read
W. A. Reed
E. E. Reisman
E. E. Reisman, Jr.
Herman Renner
†Gilbert Roberts
G. Madison Roberts
†Robert C. Robertson
W. C. Sanford
Clarence Shaw
R. E. Shelton
†W. J. Sheridan
John N. Shipp
Leopold Shumacker
J. A. Smith
†Moore J. Smith
Harold J. Starr
John B. Steele
Willard Steele
†Wm. A. Stem
Wm. G. Stephenson
†John A. Steward
†W. Dean Steward
J. B. Swafford
†Paul R. Swanson
J. Hamilton Taylor
Chas. Robert Thomas
Wm. E. Van Order
†O. L. Von Canon
A. J. Von Werssowetz
Dan N. Williams
G. Victor Williams
†Robert A. Wise
†James C. Wright

Daisy

R. L. Allen

Red Bank

J. McClure Richard

Soddy

E. L. Jenkins

HARDEMAN COUNTY

Bolivar

E. L. Baker
D. L. Brint
R. L. Cobb
C. L. Frost
Geo. W. Jackson
†Wiley D. Lewis
W. D. Martin
B. F. McAnulty
W. Winters
(Mbr. Robertson Co.)

Grand Junction

L. D. Pope

Middleton

J. Y. Alexander
P. M. Bishop

Whiteville

G. T. Brinkley
A. Richards

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Savannah

†C. Whitman Borg
O. C. Doty
J. V. Hughes
†S. L. Stephenson
Otis Whitlow
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HAWKINS COUNTY

Bulls Gap

J. E. Kite
(Mbr. Greene Co.)

HAYWOOD COUNTY

Brownsville

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Roy M. Lanier
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A. H. Sorrelle
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HENDERSON COUNTY

Lexington

Geo. A. Brandon
R. M. Conger
J. F. Goff
C. J. Huntsman
E. G. Maxwell
W. C. Ramer

Wildersville

C. E. Bolen

HENRY COUNTY

Cottage Grove

Bert Paschall

Paris

George D. Boone
†J. W. Didcoct
†Arthur Dunlap
R. Graham Fish
C. H. Johnson
†J. C. McKissick
Geo. R. McSwain
J. H. McSwain
W. G. Rhea
Elroy Scruggs
Henriette Veltman
C. D. Wilder

Puryear

A. F. Paschal

Springville

R. J. Perry

HICKMAN COUNTY

Centerville

W. K. Edwards
William L. Phillips

Lyles-Wrigley

Chas. G. Bowers
Margaretta K. Bowers

Only

L. F. Pritchard

HOUSTON COUNTY

Erin

O. H. Atkins
(Mbr. Montgomery Co.)

HUMPHREYS COUNTY

Waverly

M. R. Beyer
H. C. Capps

JACKSON COUNTY

Gainesboro

L. R. Anderson
E. W. Draper
R. C. Gaw

JEFFERSON COUNTY

Jefferson City

T. A. Caldwell
(Mbr. Knox Co.)
T. E. Wright
(Mbr. Knox Co.)

Strawberry Plains

Roland M. Webster
(Mbr. Knox Co.)

White Pine

J. I. Huggins

JOHNSON COUNTY

Mountain City

J. R. Butler
R. O. Glenn
H. S. Smythe

Shouns

E. Bruce Rhea

KNOX COUNTY

Byington

A. R. Garrison

Concord

M. F. Cobb

Corryton

A. D. Simmons

Fountain City

B. B. Mitchell
(Mbr. Wash. Co.)
J. M. Van De Griff
†Joe L. Raulston

Inskip

J. B. Parker

Knoxville

Eugene Abercrombie
Herbert Acuff
Eben Alexander
†Chas. Armstrong
W. S. Austin
Troy P. Bagwell
C. E. Barnett
Tom R. Barry
†Spencer Bell
C. W. Black
M. L. Black
W. A. Boies
†Robert Brashear
Horace E. Brown
†P. H. Cardwell
†E. E. Carrier
H. L. Carroll
†Jack Chesney
†H. S. Christian
H. E. Christenberry
†H. E. Christenberry, Jr.
W. F. Christenberry
C. L. Chumley
W. E. Clark
Chas. F. Clayton
Edward S. Clayton
†Sam M. Cooper
K. C. Copenhaver
M. M. Copenhaver
William R. Cross
J. P. Cullum
(Mbr. Loudon Co.)
H. K. Cunningham
V. C. Dail
†T. P. Day
R. V. Depue
†W. A. DeSautelle
W. T. DeSautelle
W. F. Dorsey
†Thos. B. Drinnen
†Horton DuBard
†J. Gilbert Ehlen
E. M. Edington
J. B. Ely
W. H. Enneis
†Frank Faulkner
Roy Fisher
J. H. Gammon
Edgar L. Grubb
†Glenn T. Grubb
E. A. Guynes
J. R. Hamilton
B. I. Harrison
Louis A. Haun
†George Henson
Jesse C. Hill
John R. Hill
†Oliver W. Hill, Jr.
Victor Hill
S. H. Hodge
G. Turner Howard, Jr.
H. H. Hudson
†Claud Huffman
A. G. Huffstedler
Geo. Inge
†C. E. Irwin
†W. J. Irwin
†Harry H. Jenkins
C. B. Jones
Frank E. Jones
J. H. Keeling
†John O. Kennedy
J. H. Kincaid
H. L. Kitts
†A. Hobart Lancaster
Robert P. Layman
J. Marshall Lea
Robert S. Leach
†John H. Lesher
Forest S. LeTellier
H. C. Long
H. H. McCamphell
T. L. McCarter
H. T. McClain
W. C. McClain
A. R. McCullough
†J. D. McCullough
M. D. McCullough
Richard McIlwaine
†Wm. T. McPeake
R. L. McReynolds
Edwin E. Miller
S. R. Miller
Ralph Monger
†John L. Montgomery
Chas. F. Mooney
John D. Moore
Owen Moore
J. F. Morrow
†Wm. S. Muse
J. B. Naive
J. B. Neil
†Eugene P. Nicely
†Frank O. Nichols
Hazel Nichols
†Ralph Nichols
†B. M. Overbolt
Nicholas Pappas
Robt. F. Patterson, Jr.
†Herschel Penn
†Jarrell Penn
H. Dewey Peters
S. B. Peters
B. F. Peterson
S. Joe Platt
Herbert L. Pope
W. W. Potter
Bruce Powers
R. M. Powell
John Range
Hugh Reaves
W. D. Richards
N. G. Riggins
M. S. Roberts
†J. S. Ruffin, Jr.
A. L. Rule
Wm. A. Shelton
†A. B. Shipley
Andrew Smith
Joe T. Smith
†Philip Smith
Rufus Smith
Vernon I. Smith
G. W. Smithers
John R. Smoot
†J. M. Stockman
G. W. Stone
R. G. Tappan
Phillip C. Thomas
D. R. Thomas
†George W. Tharp
Geo. M. Trotter
R. G. Waterhouse
David Waterman
†Alvin J. Weber, Jr.
†Fred West
†Leon J. Willien
G. A. Williamson
E. G. Wood
R. B. Wood
W. P. Wood
R. M. Young
E. Russell Zemp

Mascot

H. J. Bolen

Powell

M. F. Cruze

LAKE COUNTY

Ridgely

W. S. Alexander
W. L. Sumners

Tiptonville

R. W. Griffin
E. B. Smythe

LAUDERDALE COUNTY

Halls

J. G. Olds

Henning

Thos. F. Pipkin

Ripley

J. L. Dunavant
L. W. Frame
J. B. Lackey
J. R. Lewis
Thos. E. Miller
†J. H. Nunn
†W. V. Sanford

LAWRENCE COUNTY

Iron City

J. W. Jordan

Lawrenceburg

V. H. Crowder
W. O. Crowder
J. W. Danley
L. C. Harris
†Leo C. Harris, Jr.
T. A. McAmis
C. C. Stockard
T. J. Stockard

Loretto

A. D. Cole

LEWIS COUNTY

Hohenwald

Jerome Powers

---

†Military Service.

LINCOLN COUNTY

Ardmore

D. T. Hardin
J. W. Maddox

Boonshill

J. E. Sloan

Elora

A. L. Griffin

Fayetteville

C. L. Goodrich
†Ben H. Marshall
†R. E. McCown
J. V. McRady
J. M. McWilliams
T. A. Patrick

Huntland

†K. P. Brown

Kelso

J. M. Shelton

LOUDON COUNTY

Lenoir City

†Fred E. Hufstedler
†J. A. Leeper
W. D. Padgett
(Mbr. Knox Co.)
Halbert Robinson
R. V. Taylor

Loudon

Arthur P. Harrison
W. B. Harrison
J. R. Watkins

MACON COUNTY

Lafayette

D. D. Howser
M. L. Smith
(Mbr. Overton Co.)

MADISON COUNTY

Bemis

Kelly Smythe
†Roderick C. Webb
†Paul Wylie

Gadsden

F. C. James

Jackson

J. G. Anderson
Everett Archer
Glenn Batten
G. H. Berryhill
†Cecil H. Brown
R. S. Brown
Swan Burrus
†Stevens Byars
Tate B. Collins
J. L. Crook
†J. E. Douglass
†L. D. Farragut
W. T. Fitts
B. L. Green
†Robt. S. Hellman
Henry H. Herron
S. M. Herron
Leland M. Johnston
G. Frank Jones
Horace L. Jones
J. W. McClaran
Frank A. Moore
S. T. Parker
J. C. Pearce
J. E. Powers
Alvin B. Rosenbloom
W. G. Saunders
William K. Sullivan
†Richard Taylor
†J. R. Thompson, Jr.
Chas F. Webb
R. B. White

Mercer

J. M. Curry
Glenn T. Scott

Pinson

R. S. Hearn

MARION COUNTY

South Pittsburg

Russell B. James
(Mbr. Hamilton Co.)

MARSHALL COUNTY

Chapel Hill

†A. L. Cooper

Cornersville

W. F. Copeland
(Mbr. Giles Co.)

Lewisburg

J. T. Gordon
(Mbr. Bedford Co.)
H. A. Morgan, Jr.
(Mbr. Bedford Co.)
Thomas A. Wheat
(Mbr. Bedford Co.)

Petersburg

W. S. Joplin
(Mbr. Lincoln Co.)
†Edwin S. Leek
(Mbr. Bedford Co.)

MAURY COUNTY

Columbia

D. B. Andrews
H. C. Busby
†Wm. N. Cook
J. T. Hart
†Robin Lyles
†James B. Miller
R. S. Perry
E. M. Ragsdale
G. C. Williamson
J. W. Wilkes
Watt Yeiser

Hampshire

W. R. Webb

Mt. Pleasant

G. C. English
J. H. Jones
C. D. Walton
Leon S. Ward

Springhill

B. H. Woodard

Williamsport

L. E. Ragsdale

McMINN COUNTY

Athens

W. R. Arrants
R. A. Brock
R. W. Epperson
C. O. Foree
Edwin Foree
†A. W. Reeser

Helen M. Richards
†L. A. Shields

Decatur

W. J. Abel

Englewood

D. P. Breudle

Etowah

†S. Boyd McClary, Jr.

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Selmer

T. N. Humphrey
E. M. Smith
John R. Smith

Stantonville

E. G. Sanders

MONROE COUNTY

Madisonville

B. W. Bagwell
R. C. Kimbrough
H. C. Shearer

Sweetwater

L. L. Barnes
W. J. Cameron
J. A. Hardin
†D. F. Heuer, Jr.
†R. M. Price
T. M. Roberts

Tellico Plains

W. A. Rogers

Vonore

J. A. McCollum

MONTGOMERY COUNTY

Clarksville

H. H. Edmonson
V. H. Griffin
I. E. Hunt
J. H. Ledbetter
E. B. Ross
Jack Ross
John W. Ross
Bryce Runyon
M. L. Shelby
B. H. Webster
Paul E. Wilson
R. M. Workman

MOORE COUNTY

Lynchburg

F. Harlan Booher
(Mbr. Lincoln Co.)

MORGAN COUNTY

Oakdale

J. H. Carr
(Mbr. Roane Co.)

OBION COUNTY

Obion

J. C. Walker
(Mbr. Dyer, Lake, and Crockett Cos.)

Troy

E. A. Boswell
(Mbr. Dyer, Lake, and Crockett Cos.)

Union City

M. A. Blanton, Sr.
M. A. Blanton, Jr.
D. S. Latimer
Robt. G. Latimer
(Mbr. Dyer, Lake, and Crockett Cos.)
M. T. Tipton

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Livingston

W. M. Breeding
W. M. Brown
J. D. Capps
†H. B. Nevans
A. B. Qualls

PERRY COUNTY

Clifton

James T. Keeton

Flatwoods

W. E. Boyce

Linden

O. A. Kirk

Lobelville

L. D. Murphy

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Byrdstown

†Floyd B. Hay
(Mbr. Overton Co.)

POLK COUNTY

Bonton

†John Lillard
(Mbr. McMinn Co.)

Copperhill

W. Y. Gilliam
Thomas J. Hicks
†H. H. Hyatt
(Mbr. Hamilton Co.)
H. P. Hyde

Ducktown

A. J. Guinn

Isabella

F. O. Geisler

PUTNAM COUNTY

Algood

J. T. Moore

Cookeville

†Robert Akin
John L. Chestnut
(Mbr. Washington, Carter, Unicoi Cos.)
Lex Dyer
W. A. Howard
John T. Mason
Thurman Shipley
Z. L. Shipley
†H. H. Taylor
J. Fred Terry
R. L. Witherington

Granville

L. M. Freeman

Monterey

T. M. Crain

RHEA COUNTY

Dayton

Albert Broyles
(Mbr. Hamilton Co.)
W. A. Thomison
(Mbr. Hamilton Co.)
J. J. Rogers
(Mbr. Hamilton Co.)

Spring City

Max D. Lindsay
(Mbr. Hamilton Co.)

ROANE COUNTY

Harriman

Thos. L. Bowman
Hy M. Carr
†L. A. Killeffer
F. A. Neergaard

Kingston

J. C. Fly
Nat Sugarman

Oliver Springs

Fred O. Stone
(Mbr. Anderson-Campbell Co.)

Rockwood

†F. Davis Owings
Thos. H. Phillips
R. F. Regester
G. E. Wilson

ROBERTSON COUNTY

Cedar Hill

Robert H. Elder

Ridgetop

W. S. Rude

Springfield

C. M. Banks
W. B. Dye
John S. Freeman
J. S. Hawkins
A. R. Kempf
R. L. Mathews
W. W. Porter
†W. P. Stone
J. E. Wilkison

White House

R. H. Hirsh

RUTHERFORD COUNTY

Lascassas

J. C. Kelton

Murfreesboro

W. M. Bevis
J. B. Black
V. S. Campbell
†Harvey W. Carter
John F. Cason
J. R. Gott
A. J. Jamison
Lois Kennedy
M. B. Murfree
B. W. Rawlins
J. A. Scott
Sam L. Wiles

Overall

S. B. Smith

Smyrna

J. M. Shipp

SCOTT COUNTY

Huntsville

J. I. Foster

New River

M. F. Frazier

Norma

D. T. Chambers

Oneida

M. E. Thompson
Milford Thompson

Robbins

Pitney Phillips

SEVIER COUNTY

Gatlinburg

J. M. Mittleman

Rutledge

L. C. Bryan

Sovierville

R. A. Broady
R. A. McCall
†R. Mel Perry
Robt. F. Thomas
C. P. Wilson
O. H. Yarberry

SHELBY COUNTY

Bartlett

Louise B. Powell

Brunswick

C. C. Chaffee

Collierville

L. P. Pearce

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